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A COMPARISON OF INDUSTRIAL GROWTH IN FRANCE AND ENGLAND FROM 1540 TO 1640. I

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University of Chicago

THERE have been at least two "industrial revolutions" in Great Britain. The first occurred in the century preceding the Civil War. It was during the latter half of Elizabeth's reign and the reign of James I, a period marked by a decisive turn in almost every branch of English history, that industrial development was most rapid, but the whole century was one of remarkable change.

How far is this "revolution" to be understood in terms of other historical changes, such as the rise of new religious beliefs or the rapid increase in prices resulting from the inflow of precious metal from America? How far are other historical changes, such as the progress in the natural sciences or the movement to establish parliamentary government, to be understood in terms of this "revolution"? Comparisons between English history and the history of other countries can help us to arrive at partial and tentative answers to these questions. We should begin by trying to discover in what respects industrial development in various continental countries resembled that in England during the century following the Reformation, and in what respects it differed. Then, as part of a

larger study, we should try to find out how far the differences can be explained by other differences between English and continental history. Such historical comparisons may most properly begin with France, the only country besides England which has had a continuous history since the Reformation as a great European power.

Was there an early "industrial revolution" in France corresponding to that in England? The preliminary English "industrial revolution" had several aspects. One was a great expansion in the markets for industrial products, which encouraged the formation of new and larger enterprises. Another was the introduction of a series of technical changes in the processes of production, which greatly increased the amount of expensive machinery and equipment and of land required to set up in mining and manufacturing. For a modern observer, who lives in a world where large-scale enterprise has become for the first time in history the rule in industry, the most arresting result of both developments was the rapid increase in many branches of mining and manufacturing, of large expensive establishments costing, with their buildings and raw materials, thousands and in some cases tens of thousands of pounds. By 1640 the workpeople in England and Wales who labored for wages in these new mines and small factories, which were owned for the most part by private capitalists who took no part in the manual work, numbered several tens of thousands.[1]

How can we compare the progress of this form of enterprise in France with that in England? As no exact statistics are ever likely to be obtained concerning the number of workmen employed under conditions of industrial capitalism in the sixteenth and seventeenth centuries, our attack on the problem has to be roundabout. A comparison of the growth of output and of the introduction of new technical methods of production can help us, because these were the principal factors directly responsible for the progress of large-scale enterprise.

In the present sketch, we are concerned only with the first of

[1] Cf. J. U. Nef, "The Progress of Technology and the Growth of Large-Scale Industry in Great Britain, 1540–1640," *Economic History Review*, V (1934), 3–24.

these two comparisons. We shall attempt to discover how far the growth in industrial production in France between 1540 and 1640 resembled that in England, and to estimate tentatively which country had the greater volume of output relative to its population at the end of this century.[2] By comparing the progress of a number of industries in the two nations, and the place which they occupied in the national economy of each at the end of our period, we can form an impression of the growth and the relative importance of the markets for various commodities. As some commodities lent themselves to production in capitalistic plants more readily than others, our comparison of industrial growth provides us with a basis for judging in which country large-scale enterprise spread most rapidly, and in which it came to occupy the more important place.

I. FRENCH INDUSTRY AND THE RELIGIOUS WARS

In the last half of the sixteenth century the comments of many Frenchmen on economic conditions suggest that these fifty years of rapid growth in English industry were in France a period of retrogression, and that industrial production, far from increasing, actually declined sharply during the seventies and eighties, when the country was divided into rival camps by disputes connected with the religious wars. In 1596 some citizens of Tours addressed a *cahier de remonstrances* to Henri IV, the king whose accession in 1589 had helped to heal the wounds of three decades of recurring civil warfare. The town lives mainly, these citizens write, by the making of silk goods of all kinds. Before the wars there had been 800 master workmen in silk, 6,000 journeymen engaged in labor at silk looms, 300 persons who wound thread, and many others who dyed and dressed the material. Now, they complain, only 200 masters are left. They labor without either journeymen or apprentices, and the amount of silk worked into cloth is about a tenth of what it once had been.[3]

[2] I am indebted to Mr. F. J. Fisher, of the London School of Economics, and to Monsieur A. Mirot, of the Archives Nationales in Paris, for help in obtaining copies of manuscripts which I have used to some extent in connection with this article.

[3] E. Giraudet, *Histoire de la ville de Tours* (Tours, 1873), II, 59–60.

Contemporary statements of a similar nature abound, concerning the collapse of the industry and trade of various French towns or districts during the religious wars.[4] While there can be no doubt that these wars had an unfavorable effect upon industrial development, historians have been rather too ready to take such statements *au pied de la lettre*. The *cahier de remonstrances* of the citizens of Tours is an obvious example of special pleading, designed to persuade the Crown that the town cannot afford to pay the royal levies imposed upon it. The authors had every interest in exaggerating both their past affluence and their present poverty. There is little difficulty in showing that the figures in the document are unreliable.[5] And the same thing is true of those in most contemporary statements concerning the disastrous decline of commerce and industry. The statements are good as evidence that French economic development was hindered by the religious wars, but they give an exaggerated impression of the extent and the permanence of the retrogression in production.

There were many towns, devastated by fierce fighting and long occupied by troops who pilfered warehouses, ransacked trains of packhorses, and even set fire to buildings, where industry was brought temporarily to a virtual standstill by fighting.[6] But the

[4] Cf. G. Fagniez, *L'économie sociale de la France sous Henri IV* (Paris, 1897), pp. 82–83.

[5] The *cahier* tells us that Tours has lost more than two-thirds of its inhabitants as a result of the religious wars (Giraudet, *op. cit.*, II, 58). But two years later, in 1598, the population of the town was estimated at 55,331. As the population of Tours never reached 60,000 in the sixteenth century (*ibid.*, pp. 97, 320), and does not amount to quite 75,000 today, this estimate for 1598, exaggerated though it undoubtedly is, makes the statement that the town had lost "more than two-thirds" of its inhabitants look absurd, and throws discredit on all the figures in the *cahier*. Again, the document tells us that nearly 40,000 persons had once lived by the silk industry at Tours and its environs. Monsieur Godart has shown that at Lyons similar estimates of the number of silk workers cannot be taken seriously. They were sometimes represented as more numerous than the population of the town itself is known to have been (J. Godart, *L'ouvrier en soie* [Lyons, 1899], pp. 16–18).

[6] Cf. Fagniez, *op. cit.*, pp. 77–80. I am familiar with only one case in which actual records of production for all the years of the religious wars have been brought to light. These are for the output of cloth in the great woolen textile center of Hondschoote in Flanders, which was at the time outside the boundaries of France. Production fell from 91,878 pieces annually on the average during the sixties to

area affected at any given time by warring armies was small when compared with the total area of the country. And there was generally a sharp recovery after the troops moved on.

After reading statements like those contained in the *cahier de remonstrances* from Tours, many historians have assumed that French industrial output as a whole was much greater in the late fifties of the sixteenth century, before open hostilities had broken out, than in the late nineties, after peace had been almost completely restored. But that is by no means certain. In Poitou the production of cloth and leather goods grew substantially during the second half of the century.[7] While the silk manufacture at Tours may have lost ground, that at Lyons increased in importance. Actual records of workmen employed in the various branches of silk-making in the latter town indicate that the growth which began early in the sixteenth century continued through the period of civil warfare, and that there were more than three times as many silk workers in 1621 as in 1575.[8] While the exports of French salt to the Baltic in the years 1595–99 were little more than a third what they had been in the years 1562–66,[9] the

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less than 12,000 pieces from 1582 to 1589, when the place was sacked and occupied by troops, and though there was an important revival of the industry in the nineties, the manufacture never completely regained its old importance (E. Coornaert, *La draperie-sayetterie d'Hondschoote* [Paris, 1930], pp. 28, 42, 47, 50, 57). But it would be rash to assume that there were many French towns which did not recover from the wars more fully than Hondschoote. It was part of the Spanish Netherlands, where the textile industry was harder hit and more permanently dislocated than in France. It was more vulnerable to attack than most textile centers even in Flanders. And, finally, it might have recovered entirely, in spite of these disadvantages, had it not lost at the end of the sixteenth century the monopoly of a special technique on which the development of its textile industry before the religious wars had been based (*ibid.*, pp. 48–49).

[7] P. Raveau, *Essai sur la situation économique et l'état social en Poitou au XVI^e siècle* (Paris, 1931), pp. 18–21, 41, 43–45. The late M. Raveau, whose knowledge of the economic history of Poitou was rivaled only by that of the late Professor Boissonnade, made a close examination of conditions in the textile and the tanning industries.

[8] Godart, *op. cit.*, pp. 17–19. Godart puts the number at 448 for 1575, and finds a record of 1,460 workers of all kinds in 1621.

[9] The shipments of salt entered in the records of the Danish Sound tolls as coming from French ports fell from 17,162 "laests" annually on the average for the years

transatlantic commerce from Havre and Honfleur, at the mouth of the Seine, was greater during the years of the religious wars than after Henri IV had established more peaceful conditions.[10] While the towns of Languedoc, especially Montpellier and Aigues Mortes, were apparently declining in commercial importance during the last half of the sixteenth century, Marseilles had an expanding traffic at least well into the eighties, both up the Rhone valley and by sea with other Mediterranean ports.[11] If industrial output in the lower Seine and the lower Rhone valleys had declined seriously during the religious wars, we should expect to get some reflection of this in the trade of the principal ports.

Periods of warfare and civil strife always produce exaggerated utterances. During the French religious wars no readily accessible information was available to impose a curb on statistical extravagances, and men probably still spoke of "soixante mille," as they had done in the Middle Ages, meaning merely "a large number."[12] The statements of contemporary writers are valuable indications that French industry was developing much more slowly than English between 1560 and 1595. But if we are to reach an opinion about the actual course of French industrial output during the religious wars, and in the century from 1540 to 1640 as a whole,

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1562–66 to 6,129 "laests" for the years 1595–99 (Nina Bang, *Tables de la navigation et du transport des marchandises passant par le Sund, 1497–1660* [Copenhagen, 1922], Vol. II, *passim*). Miss Astrid Friis has shown that the Sound toll accounts must be regarded in many respects as unreliable, at any rate in so far as cloth shipments are concerned (*Alderman Cockayne's Project and the Cloth Trade* [London, 1927], pp. 225–26). But I do not feel that the errors which she has revealed (I have not seen her article in the *Dansk Historisk Tideskrift*) are sufficiently grave to compel us to abandon the use of Miss Bang's work as a rough guide to the progress of various branches of Baltic commerce in the sixteenth and seventeenth centuries. I am grateful to my colleague, Mr. A. G. Hart, who did a paper in one of my courses some years ago on English trade with the Baltic, for help in interpreting the data printed by Miss Bang.

[10] P. Barrey, "Le Havre transatlantique, 1571–1610," in Hayem, *Mémoires et documents pour servir à l'histoire du commerce et de l'industrie*, V[e] Série (1917), pp. 68–70.

[11] *Encyclopédie départementale. Les Bouches-du-Rhône* (ed. Paul Masson, 1920), III, 178–82.

[12] So Professor E. F. Gay suggests to me.

they cannot be relied upon. We must attempt, by piecing together such data concerning production as are available in scattered sources, to compare the progress of particular industries in France with that in England. Before turning to the greatest industries—mining, metallurgy, textiles, and building—upon which our conclusions concerning the growth of output must be chiefly based, we shall consider three other industries—saltmaking, glassmaking, and shipbuilding—that have not received from historians the attention to which their importance entitles them.

The kingdom of France in the late sixteenth and early seventeenth centuries was much smaller in area than the French Republic as we now know it. Alsace, Lorraine, Franche-Comté, Artois, Hainault, Flanders, and Roussillon, to name only the principal provinces which were added before 1789, lay outside. Even without them, France was a much larger country than England and Wales, and in the reign of Louis XIII, from 1610 to 1643, it was very nearly if not quite three times as populous as the English kingdom of James I and Charles I.[13] For the purpose of comparing the place occupied by various industries in the national economy of the two countries, it seems reasonable to consider the volume of production in relation to the size of the population. Judged on this basis, the industrial output of England, far smaller at the time of the Reformation, appears to have overtaken and even to have surpassed that of France before 1640.

II. THE MANUFACTURE OF SALT

Pierre Duval, in his *Description de la France*, first published in 1663, said the salt works might well be regarded as mountains of gold to the French king. During the late summer and early autumn, foreign ships from the north of Europe came in scores and even in hundreds to the mouth of the Rhone, and to ports along

[13] Even the best estimates of population prior to the nineteenth century involve a large amount of guesswork. But it is probable that there were more than fourteen million people in Louis XIII's kingdom, while the population of England and Wales at that time was probably not less than four and a half nor more than six millions (E. Levasseur, *La population française* [Paris, 1889], I, 191–92, 206; G. T. Griffith, *Population Problems of the Age of Malthus* [Cambridge, 1926], p. 12 n.; cf. J. Beloch, "Die Bevölkerung Europas zur Zeit der Renaissance," in *Zeitschrift für Sozialwissenschaft*, III [1900], pp. 773–75).

the Bay of Biscay between the Gironde and the Loire, to load cargoes of the salt that had been scooped up by thousands of local peasants after the sun had done a long summer's work among the numerous *marais salants* of both regions.[14] The salt produced in England and Wales on the eve of the Civil War was still insufficient to supply the needs of the country. It had to be supplemented by imports, partly from Scotland, but mainly from Portugal and France.

The supremacy of the French in salt production was no new thing. Visits by fleets of ships from English, Dutch, German, and Baltic ports to the marshes along the Bay of Biscay had formed an important branch of medieval sea trade in the fifteenth century,[15] and doubtless much earlier. While England still lagged behind France in salt production in the thirties of the seventeenth century, her position had improved greatly during the previous hundred years. There had been a rapid growth in the English demand for salt to preserve fish and other perishable foods, as a result of both the increase in population and the breakdown of the economic self-sufficiency of local areas, which were no longer able to feed themselves. But the new demand had been largely met by the progress of the domestic manufacture. At the mouth of the Tyne, where salt-boiling had once been almost entirely in the hands of the monks, annual production increased from some few score or at the most some few hundred tons, when Henry VIII

[14] Pierre Duval, *Description de la France* (Paris, 1663), pp. 38–39; H. Hauser, "Le sel dans l'histoire" in *Les origines historiques des problèmes économiques actuels* (Paris, 1930), p. 60. Some salt was also produced by boiling sea water along the northern coasts of France, especially in western Normandy near Avranches and Mont-Saint-Michel, and by boiling brine from springs in Béarn. But the quantity was negligible compared with that made at the salt marshes along the Mediterranean and the Bay of Biscay (E. Lefebvre, *Le sel* [Paris, 1882], p. 93; P. Boyé, *Les salines et le sel en Lorraine* [Nancy, 1904], p. 5; C. Dartigue-Peyrou, *Le vicomté de Béarn, 1517–55* [Paris, 1934], pp. 362–64). The salt manufactured in the west of Normandy was apparently entirely for local consumption, for Rouen got its salt supplies in 1631 not from the Avranches region but from the Bay of Biscay (Eugène Sue, *Correspondance de Henri de Sourdis* [Paris, 1839], III, 213–14).

[15] M. M. Postan, "The Economic Relations of England and the Hanse, 1400–1475," in *Studies in English Trade in the Fifteenth Century*, ed. E. Power and Postan (London, 1933), pp. 128, 142. Cf. E. Levasseur, *Histoire du commerce de la France* (Paris, 1911), I, 162.

ordered the dissolution of the monasteries, to about 15,000 tons in the reign of Charles I, when the industry had come under the control of a powerful group of merchants from Newcastle and East Anglia. Salt was also manufactured from sea water at many other places along the coast of England and Wales. While progress was nowhere as remarkable as at the mouth of the Tyne, there was a rapid increase in the quantity of salt made by boiling the brine from springs in Worcestershire and especially in Cheshire.[16] At the time of the dissolution of the monasteries, 1536–39, the annual output of salt in England and Wales was probably under 15,000 tons.[17] A century later it had probably reached at least 50,000 tons.[18]

As a result of the growth in the domestic manufacture and the beginning of substantial imports from Scotland, where the salt industry grew almost as rapidly as on the Tyne, the proportion of English supplies obtained from the Continent fell from two-thirds or three-fourths[19] to perhaps a third.[20] Hence there was little room for the French to expand their exports to England. Their shipments to the Baltic actually declined slightly, to judge from the records of cargoes passing eastward through the Danish Sound.[21]

[16] J. U. Nef, *The Rise of the British Coal Industry* (London, 1932), I, 174–77.

[17] Edward Hughes, "The English Monopoly of Salt in the Years 1563–71," *English Historical Review*, XL (1925), p. 334.

[18] Between 15,000 and 20,000 tons were produced annually in the thirties of the seventeenth century in Durham and Northumberland alone, and the output at the brine pits in Worcestershire and Cheshire was probably even greater (Nef, *Rise of the British Coal Industry*, I, 177, 174–75).

[19] Hughes, *loc. cit.*

[20] Mr. Hughes estimates the annual consumption of salt in England in Henry VIII's reign at about 40,000 tons (*loc. cit.*). A century later it may well have doubled (cf. Nef, *Rise of the British Coal Industry*, I, 179, esp. n. 1), but by that time England and Wales were probably producing at least 50,000 tons, and some of the imports were coming, not from the Continent, but from Scotland.

[21] The average annual shipments of salt eastward through the Sound amounted to 31,282 "laests" during the five-year period 1562–66; 29,000 during the five-year period 1605–9; and 26,883 during the five-year period 1635–39. It is difficult to determine the precise share of France in this trade, as there were many reshipments, but the annual average entered as coming from French ports fell from 17,162 to 15,358 and 14,694 "laests" in the three five-year periods (Bang, *op. cit.*, *passim*). Cf. above, n. 9.

The French export market seems to have remained practically stationary between 1540 and 1640.

What about the French domestic market? It is hardly possible that it grew nearly as rapidly as the English, for the main factors which caused the great increase in the consumption of salt in England—the growth of population and the breakdown in the economic self-sufficiency of local areas—were not operating to anything like the same extent in France.[22] We have no evidence concerning the course of production along the Bay of Biscay, but the output on the Mediterranean coasts seems to have declined at the beginning of the seventeenth century. M. de Séguiran, the first president of the king's *Cour de Comptes, Aides et Finances* at Aix, has left behind an illuminating account of his tour of inspection through Provence in 1633. He visited last of all the small town of Berre, in the marshy country west of Aix, where the inhabitants gained their livelihood principally by work at the great salt marshes of the Crown. Here he found the population reduced by nearly half since 1588.[23]

In Cheshire and the North of England fires were lit in hundreds of new furnaces, underneath cauldrons of lead filled with brine and large pans of iron filled with sea water, and the output of English salt increased three- or fourfold or even more between 1540 and 1640. In western and southern France the peasants continued to gather salt from the marshes as their ancestors had done for centuries; but the quantity of sea water evaporated grew slowly if at all.

III. THE MANUFACTURE OF GLASS

The output of glass increased in France more than the output of salt. In order to compare the development of the French glass-making industry with the English it is necessary to distinguish between the different kinds of glass work done in Europe in the sixteenth and seventeenth centuries. First of all, there was the beautiful stained glass designed mainly for the windows of churches and cathedrals, and also to some extent for those of castles and public buildings. The glazed windows were an inheritance from

[22] Cf. below, p. 313.

[23] Sue, *op. cit.*, p. 311.

the great age of Gothic building in the twelfth and thirteenth centuries. But the methods employed in glazing had changed, and also the artistic effects, as everyone knows who has visited cathedrals like those of Bourges and Sens, where the jeweled mosaics of the earlier period can be seen side by side with the much less complex painted glass of the Renaissance.

Accounts kept in connection with the building of English medieval churches show that much of the glass for their windows was imported.[24] But by the beginning of the sixteenth century the painted glass of native glaziers, which may still be seen in churches like that of Fairford in the Cotswolds, had come to rival in beauty any made in France. In both countries this kind of work lost its importance before the seventeenth century, when the production of stained glass windows had become negligible compared with that of glass fashioned for more worldly purposes into goblets and mirrors, ordinary window panes, bottles, jugs and drinking cups of all varieties, test tubes, and lenses.

Ever since the beginning of the fourteenth century, if not earlier, glass had been produced in these forms in growing quantities all over Europe. But there were three countries where the glaziers had attained a special fame by the beginning of the sixteenth century for their artistic glassware. One was Italy, where the goblets, decanters, jugs, vases, and mirrors made at Venice and Altare, near Genoa, enjoyed an unrivaled reputation for their beauty of color and elegance of design. Italian glaziers were celebrated, above all, for the exceptional transparency of the white glass, widely known as "crystal,"[25] in which much of their finest work was done. The other two countries were Bohemia and Lorraine. The *gentilshommes verriers* of Lorraine were especially noted for their colored glass, but they also made plain white window panes and somewhat less perfect versions of most of the objects for which Italy was famous.[26] The technical processes by which the Italian

[24] L. F. Salzman, *English Industries of the Middle Ages* (2d ed.; Oxford, 1923), p. 188.

[25] Some French glass was also called "crystal." See below, p. 301.

[26] There is no doubt that the techniques employed in the two countries were quite distinct, for attempts were made in the seventeenth century to introduce Venetian

glaziers attained the remarkable artistic effects which gave their work a form comparable to that achieved on a canvas by some of the greatest contemporary painters of the Venetian School were a secret which countries farther north were anxious to acquire. The history of glass-making in France during the century beginning about 1540 divides itself into artistic glass-making in ovens set up and used by Italian glaziers, and the making of cruder glass wares by native craftsmen, occasionally with the help of artisans from Lorraine.[27]

The making of Italian crystal found much more congenial soil in France than in England. In spite of legislation condemning to death the glazier who carried the secrets of his art to other nations, and threats that the sentence would be carried out by spies sent to poison him in his adopted country, a number of Italian artisans started glassworks in various French provinces. There is some evidence that glaziers came across the Alps into Provence, Dauphiné, and Languedoc before the sixteenth century, and Venetian crystal was certainly produced at Lyons as early as 1511.[28] But, in northern and western France, it was only after 1550 that glass for crystal goblets was blown by Italians, or under their supervision. During the next sixty years various enterprises, which aimed to produce every kind of fine Italian glassware, with the exception of very large mirrors, were established at Saint-Germain-en-Laye, Nevers, Nantes, Rouen, at two villages in Brittany, at Mézières on the Meuse, and possibly in Paris at Saint-

glass-making into Lorraine, long after Lorraine glass had established a great reputation throughout Europe. Moreover, there were attempts to introduce Lorraine glass-making into Italy (H. Schuermans, *Verres "façon de Venise" ou d'Altare fabriqués aux Pays-Bas*. Letters published 1884–93 [Bibliothèque Nationale, Paris, 8° V. 40792], p. 731; Abbé Boutillier, *La verrerie et les gentilshommes verriers de Nevers* [Nevers, 1885], pp. 139–41). According to Symphorien Champier, glass mirrors were invented in Lorraine (*Les gestes ensemble de la vie du preux chevalier Bayard* [Paris, 1526], as cited J. B. Giraud, *Documents pour l'histoire de l'armement au Moyen Age et à la Renaissance* [Lyons, 1904], II, 119–20 n.). On the early progress of the glass industry there, see M. Beaupré, *Les gentilshommes verriers ... dans l'ancienne Lorraine* (2d ed.; Nancy, 1846–47), esp. pp. 7–38; H. Lepage, "Recherches sur l'industrie en Lorraine," *Mémoires de la Société des sciences, des lettres, et des arts de Nancy* (Nancy, 1849), esp. pp. 26–61.

[27] E.g., in Nivernais (Boutillier, *op. cit.*, p. 127).

[28] Schuermans, *op. cit.*, pp. 635–37, 693, 723–24, 739.

Germain-des-Prés, while Italian glass-making at Lyons was promoted by the family of Sarode.[29] The concession for the enterprise at Rouen was granted in 1598 to two Italians from Altare,[30] but the plant was not actually erected until 1605 or 1606. Although it was then owned by a Frenchman, François de Garsonnet, from Aix-en-Provence,[31] there is little doubt that in it crystal was made after Italian methods. The shop at Saint-Germain-en-Laye was closed during the religious wars, and that at Mézières was burned down shortly before 1611.[32] The others survived. All of them appear to have been in operation in 1640.

The owners of these new establishments did not always limit themselves to blowing glass for the finest artistic wares, which were wanted mainly by the court and the very wealthiest classes. Most of them appear to have combined an increasing amount of common glass work with their artistic production. But their influence in promoting fine glass-making on the Italian model was by no means confined to these workshops. There were a number of native glaziers who were attempting, with their own methods, to fashion a product fine enough to rival Italian crystal,[33] which was simply a glass of singular translucence and refinement.[34] Italian

[29] *Ibid.*, pp. 103–4, 698–700 (Saint-Germain-en-Laye), 703–6 (Paris), 663–66 (Nantes), 673 (Mézières), 668–69 (Javardan and Laignelet in Brittany); Boutillier, *op. cit.*, pp. 10–45 (Nevers); A. de Girancourt, *Notice sur la verrerie de Rouen, 1598–1664* (Rouen, 1867), pp. 6 ff. I have included only those cases in which unassailable proof is given that enterprises producing Italian glassware were actually set up before 1640. There were probably other Italian glassworks, for example at Orléans and in Poitou (Benjamin Fillon, *L'art de terre chez les Poitevins* [Paris, 1864], pp. 208–9).

[30] Girancourt, *Nouvelle étude sur la verrerie de Rouen ... au XVI^e et XVII^e siècles* (Rouen, 1886), pp. 63–65.

[31] Girancourt, *Notice*, pp. 7–8.

[32] Schuermans, *op. cit.*, pp. 105, 673. It is possible that the furnace at Mézières was rebuilt.

[33] Cf. Jules Houdoy, *Verreries à la façon de Venise* (Paris, 1873), p. 5.

[34] It is not to be confused with the celebrated English crystal, made with lead oxide, which was first produced toward the end of the seventeenth century. Italian crystal was distinguished from native French "verre de fougères" by the fact that it was "mieux affiné et plus blanc" (cf. Girancourt, *Notice sur la verrerie de Rouen*, p. 12; Houdoy, *op. cit.*, p. 23). The better grades of French glass were also sometimes called "crystal" (cf. Saint-Quirin, "Les verriers du Languedoc," *Bulletin de la Société languedocienne de géographie*, XXVII [1904], 309–10).

example was making itself powerfully felt in France in glass-making as in all the arts. "Of all European countries [except Italy]," writes the principal authority on the influence of the Italian glaziers, "France was the one where glasswork, 'façon d'Italie,' was best organized and practiced longest and most successfully."[35]

There is little evidence that Italian methods had much direct influence in England; hardly any important enterprises for fashioning Venetian crystal were established before the Civil War. An unsuccessful attempt by fugitive Venetians to start artistic glass-making in England between 1549 and 1551 does not seem to have left much impress,[36] and it was mainly from the "gentlemen glaziers" of Lorraine that the English acquired such knowledge of foreign technique as they utilized in the industrial expansion of the late sixteenth and early seventeenth centuries.[37]

Owing to the restricted character of the market for artistic glassware, and the remarkable craftsmanship required in fashioning it, the quantity produced was bound to remain small. In volume, it was of little importance compared to the output of ordinary window panes and bottles and crude glass objects of all kinds. Progress in the production of this cheaper glass in France between 1540 and 1640 was much less striking than progress in making those fine goblets, plates, vessels, and mirrors which adorned the palaces of the king and the chateaux of noblemen, and which have now fittingly found their place in the Musée de Cluny, beside the Venetian glass after which they were modeled.

At the beginning of the sixteenth century common glass bottles, bowls, lanterns, and drinking cups, together with some window

[35] Schuermans, *op. cit.*, p. 634. Although Schuermans' letters are devoted primarily to the influence of Italian glass-makers in the Low Countries, he made a thorough study of their influence in France. In the copy of his work in the Bibliothèque Nationale (see above, p. 300, n. 26) has been inserted a great deal of MSS correspondence which he carried on with French antiquarians, who were studying their local glass industry, and with archivists in the various departments of France.

[36] Albert Hartshorne, *Old English Glasses* (London, 1897), pp. 147 ff.; cf. *Calendar of State Papers Domestic*, 1591–94, p. 179.

[37] The only evidence which Schuermans gives in support of his contention that Italian glassmakers had a direct influence upon the industry in England relates to the period after 1640 (*op. cit.*, pp. 121, 543–46).

panes, were being manufactured at ovens or small furnaces in every French province.[38] This was no new thing. Many of these glass works had a history reaching back at least to the fourteenth century. What we should like to know is how far the growing demand after 1540 for glass to be used for practical purposes extended to other classes in French society besides the nobility and the richer bourgeoisie, who could generally afford, and who naturally preferred, to buy artistic glassware on the Italian model. And we should also like to know how far the poor man was able and willing to pay for the added comfort provided by glass windows, which had been installed hitherto only in the residences of the rich. It will help us to answer these questions if we can learn to what extent ordinary glass furnaces in France increased after 1540 in number and importance.

Several local studies made during the second half of the nineteenth century, but almost forgotten even by economic historians, provide us with a basis for estimating the progress of the manufacture. The most comprehensive deals with Normandy. It is the work of Le Vaillant de la Fieffe, a member of one of the four noble families which had, until the Revolution, the exclusive right to make common, as distinguished from Italian, glass within the province. Le Vaillant scoured the local archives for evidence concerning seventy separate glass works which existed at one time or another between 1302 and 1873. His survey shows that in 1540 there were certainly seventeen, and possibly as many as twenty-four enterprises in operation. By 1640 the number had increased to at least twenty-eight and possibly to as many as thirty-three.[39]

[38] Apart from the evidence given below of glass-making in Normandy, Nivernais, Poitou, and Languedoc, we know that the industry was carried on in Provence, Dauphiné, Limousin, Auvergne, Picardy, Burgundy, Forez, Béarn, Champagne, Rouergue, Comté de Foix (L. Barthélemy, *La savonnerie marseillaise*, p. 7; Schuermans, *op. cit.*, pp. 828 ff., 692–95, 824 ff., 727, 812, 822, 656; L. J. Gras, *Notes historiques sur l'industrie de la verrerie en Forez et Jarez* [St. Etienne, 1923], p. 156; P. Boissonnade, *Le socialisme d'état, 1453–1661* [Paris, 1927], pp. 233–34), and Brittany (A. André, "De la verrerie et des vitraux peints dans l'ancienne province de Bretagne," *Bulletin et Mémoire de la Société archéologique du département d'Ille et Villaine*, XII [1878], 119 ff. See also *Revue des sociétés savantes*, 7th ser., II [1880], 83 ff.).

[39] O. Le Vaillant de la Fieffe, *Les verreries de la Normandie* (Rouen, 1873), *passim*.

We cannot take for granted, of course, that these figures provide us with a guide to the growth in output. The scale and nature of operations may have changed. But there is no evidence of any notable growth between 1540 and 1640 in the capital invested in particular enterprises, such as occurred in the same province in the late seventeenth and eighteenth centuries. The manufacture of common glass still showed no tendency to concentrate in considerable factories, as it was already doing in Great Britain.

Normandy was the principal glass-making province in the kingdom. Norman window panes rivaled in fame those of Lorraine, and the methods of Norman glaziers had an influence throughout France, second to those of the Italians, but hardly inferior to those of the Lorrainers.[40] All kinds of Norman glass were sold in the great Parisian market, and some Norman window panes were exported to the Low Countries and even to England.[41] No other province, with the possible exception of Nivernais,[42] had such important outlets for its glassware beyond provincial boundaries.

What we know about glass-making in other French provinces does not suggest that production in the country as a whole was growing more rapidly than in Normandy. In the case of Nivernais, the century from 1540 to 1640 appears to have been one of considerably increased activity, but we cannot be sure that the enterprises of which we hear for the first time had not an earlier history, because there has been no investigation of local glass-making comparable to that of Le Vaillant for Normandy.[43] The glass industry of Poitou, on the other hand, apparently began to decline in the reign of Henri IV, partly as a result of competition from the neighboring provinces, and this decline was not arrested in the seventeenth century.[44] In Languedoc, for which our information is again more complete, the early fifteenth century was

[40] Girancourt, *Nouvelle étude*, pp. 57–58; L. Roubet, "La verrerie d'Apremont," *Bulletin de la Société nivernaise des sciences, lettres et arts*, 3d ser., II (1886), 93.

[41] Le Vaillant, *op. cit.*, p. v; Girancourt, *op. cit.*, p. 57; J. E. Thorold Rogers, *A History of Agriculture and Prices in England* (Oxford, 1887), VI, 472.

[42] Cf. Boutillier, *op. cit.*, pp. 131, 133–36.

[43] *Ibid.*, pp. 116–33. The Abbé Boutillier's monograph is devoted mainly to the history of the artistic glass works at Nevers, started by Italians (see above, p. 300).

[44] Fillon, *op. cit.*, pp. 205, 211.

the period during which the greatest number of new glass works were established.[45] The late sixteenth and seventeenth centuries were not a propitious time for the glass industry, for most of the glaziers embraced the Protestant religion and suffered in the persecutions carried on in southern France.[46]

In France the century from 1540 to 1640 saw the continuance of a growth in the production of common glassware, which had been long in progress. But the growth was not remarkably rapid. It is evident that the use of window panes, bottles, and cheap glass vessels was extending only gradually to families whose ancestors had got along without them.

In England conditions were very different. The hundred years from 1540 to 1640 were marked by the first great expansion in the native manufacture of window glass and every variety of cheap commercial glass. Hitherto the output of English ovens had been confined to small quantities of the crudest sort of urinals and little bottles.[47] The author of *A Discourse of the Common Weal*, whose knowledge of the articles commonly used in housekeeping was considerable, wrote at about the middle of the sixteenth century as if the English were still dependent entirely upon imports, not only for their looking glasses, but also for their drinking glasses and even their window panes.[48] Furnaces for the manufacture of the cheap variety of window glass, known as broad glass, were first set up in Sussex in the sixties of the sixteenth century, and during the next two decades much progress was made in the production both of window panes and of other cheap ware, such as bottles, cups, jugs, lanterns, apothecaries' glasses, spectacles and other kinds of lenses. By the middle of Elizabeth's reign, Harri-

[45] Saint-Quirin, *op. cit.*, XXVIII (1905), 340. Glass-making appears to have been considerably extended in other parts of France during the fifteenth century (cf. P. Marchegay, "Une verrerie dans la Forêt de Roche-sur-Yon en 1456," *Annuaire de la Société d'Emulation de la Vendée*, IV [1857], 220–23; *Encyclopédie Départementale, Les Bouches-du-Rhône*, III, 167).

[46] Saint-Quirin, *op. cit.*, XXIX (1906), 202.

[47] Cf. E. W. Hulme, "English Glass-Making in the 16th and 17th Centuries," *The Antiquary*, XXX (1894), 210–11, 261. Some ordinary window glass had been made in England in the fifteenth century, but the manufacture had disappeared, probably for want of technical skill.

[48] *A Discourse of the Common Weal of This Realm of England*, ed. Eliz. Lamond (1893), pp. 16, 63–64, 126.

son, who felt that the introduction of too many comforts during his lifetime had undermined the Spartan virtues once possessed by the English people, commented upon the remarkable increase in the number of window panes. He also spoke of the growing use of glassware among the poorer classes. These new demands, he tells us, except that for luxury glass, are already being met by a native manufacture.[49] By the reign of James I, that manufacture had grown so prodigiously that glass windows were generally found in the houses of the yeoman, the small shopkeeper, and the craftsman, as well as in those of the nobleman, the gentleman, and the rich merchant. It appears that they had already become more common than in France. In 1608, Thomas Coryat, the parson's son from Somerset who left behind a detailed account of his continental travels, was surprised to find in Lyons that many of the windows were covered entirely with white paper, and that in France generally panes were put only in the upper portion of the window.[50]

The discovery, before 1612, by some inventor whom the historian has not yet identified, of a method of separating the raw materials in covered crucibles from the flames, made possible the substitution of coal for wood in the glass furnaces. This cheapened the product and greatly stimulated the production of glass during the decades preceding the Civil War.[51] Furnaces for the manufacture of broad glass spread in considerable numbers from Sussex to London, Wiltshire, Gloucestershire, Worcestershire, Staffordshire, Nottinghamshire, the Tyne valley, and Scotland.[52]

While common glass furnaces were still much more numerous in France than in England in the thirties of the seventeenth century, they were generally a great deal smaller. The use of coal in place of wood had encouraged the production of glass in far greater quantities than before.[53] English glass-making, which had been

[49] *An Historical Description of the Island of Britain*, 1587 ed., p. 167.

[50] *Coryat's Crudities Hastily Gobled Up* . . . . (new ed.; Glasgow, 1905), I, 197, 204.

[51] Cf. Nef, *Rise of the Coal Industry*, I, 181–83, 218–19.

[52] *Ibid.*, pp. 181–82; Hulme, *op. cit.*, pp. 211, 214, 262.

[53] Cf. Saint-Quirin, *op. cit.*, XXVIII (1905), 343. Furnaces making in the neighborhood of 100 tons of glass a year were common in England early in the seventeenth century (Nef, *Rise of the British Coal Industry*, I, 183).

of very slight importance compared with French before Shakespeare's time, had grown so rapidly that the manufacture rivaled that of France in so far as the mere volume of output was concerned.[54] Before the end of the seventeenth century, if not earlier, England apparently led all Europe in the production of window panes and bottles. According to an anonymous authority, who wrote in 1699 on economic conditions, the London glaziers "have Excelled all the World, and beat the Dutch Intirely and almost all our Neighbours, out of the Trade of Glass."[55]

IV. THE BUILDING OF SHIPS

There was little in the natural resources and geographical features of the French kingdom to encourage the extensive building of ships for ocean trade. The same anonymous authority who wrote about the superiority of the London glaziers, tells us that "the [Dutch] want of most things within themselves, creates a constant and never failing work for their Navigation. The French, that have every thing within themselves . . . . have not the same occasion to raise and Support any considerable number of Ships and Sailors."[56]

Between the accession of Elizabeth in 1558 and the outbreak of the Civil War in 1642, England came to occupy an intermediate position between these two extremes. She lost to some degree the insularity which had made her economically hardly less self-contained than France in the Middle Ages. At the same time, local regions lost to a much greater degree the economic self-sufficiency that had hindered the growth of coastwise commerce, to which the ragged English coastline, with its abundant harbors, offered an invitation. Colliers, hoys of all kinds to carry food and bulky goods from one English port to another, barks and larger ships for overseas trade were launched in growing numbers at many towns, and especially from the private shipyards in East Anglia, which was becoming the traditional home of sea-faring men. After the reign of Elizabeth, many of the new ships, especially the colliers, were built after the model of the Dutch *flute*, in order to enlarge the

[54] Cf. Hulme, *op. cit.*, XXXI, 104, 134.

[55] *The Mischief of the Five Shillings Tax upon Coal* (London, 1699), p. 22.

[56] *Ibid.*, p. 9.

hold space available for bulky cargoes, and to reduce the number of seamen required to sail each vessel.

In an age when many sea-going craft were manned by less than a dozen sailors, and when the average tonnage of ships engaged in many branches of ocean commerce was less than fifty,[57] a merchantman of more than 100 tons' burden was regarded as a great ship. There were many different methods of calculating a ship's tonnage, and these gave divergent results, differing sometimes as much as 25 per cent.[58] It would be rash, therefore, to claim that the tonnage figures in records of the period are more than rough approximations. But the range of variation was small enough to permit their use when we are simply attempting a rough estimate of the progress of shipping. The figures in contemporary documents suggest that the number of ships of more than 100 tons in the English merchant marine increased nearly fivefold between 1560 and 1629. A list for the earlier year, which is virtually complete save for the unimportant omission of the ships of Bristol,[59] enumerates 76 such merchantmen. Another, for the later year, somewhat less complete, includes 355.[60]

Meanwhile, smaller sea-going craft, which outnumbered these large merchantmen by something like ten to one, probably increased almost proportionately.[61] Keels and lighters of all kinds

[57] Except for the coal trade between Newcastle and London there were few, if any, branches of English commerce in which the ships averaged over 100 tons' burden before the middle of the seventeenth century. Hoys and barks employed in the coal trade of Sunderland and the west coast averaged less than 40 tons, and those employed in various branches of foreign trade appear to have averaged between 36 and 54 tons (Nef, *Rise of the British Coal Industry*, I, 390, 392; II, 387–88; V. Barbour, "Dutch and English Shipping in the Seventeenth Century," *Economic History Review*, II [1930], 262–63 n.).

[58] M. Oppenheim, *A History of the Administration of the Royal Navy* (London, 1896), pp. 266–67.

[59] This omission is not serious, for Bristol apparently had only four 100-ton ships in 1572 and only eight in 1577 (E. Lipson, *Economic History of England* [London, 1931], II, 250; Oppenheim, *op. cit.*, p. 173).

[60] Oppenheim, *op. cit.*, pp. 172, 271. Cf. below, p. 316.

[61] In two lists, for 1582 and 1583, of English merchant ships of 20 tons' or more burden, about 10 per cent were larger than 100 tons (*ibid.*, p. 175). This figure considerably understates the proportion of small craft at the time, for boats of less than 20 tons' burden were sometimes used in the fishing and coasting trades during the sixteenth and seventeenth centuries. Beginning in the second decade of

for loading and unloading cargoes in the harbors and rivers, and barges for carrying passengers across the Thames became many times more numerous, as the population of London grew five- or sixfold, and the coastwise traffic in some commodities expanded at a still more rapid rate. A river traffic calling for "trows" and "frigates," sometimes larger than small ocean-going barks, sprang up on the Severn.[62] To protect the expanding trade by sea, always vulnerable to the harassing attacks of the Dunkirk pirates, and exposed to the graver threat of a possible Spanish or Dutch armada, many of the larger merchantmen were armed with small cannons; and men-of-war, sometimes of more than 1,200 tons' burden, were built in the shipyards of the Crown at Woolwich, Deptford, Chatham, and Portsmouth, where they could be easily outfitted with the largest culverins and cannons cast at the new iron furnaces. During the eighty years between the end of Henry VIII's reign and the beginning of Charles I's, the tonnage of the royal navy about doubled.[63]

We have not found any comprehensive lists of French merchantmen drawn up earlier than the thirties of the seventeenth century, such as would enable us to compare directly the progress of the French merchant marine with the English. All that can be done is to make use of the very meager data available concerning the growth of the main branches of commerce in the two countries. While these data are not complete enough, nor in all cases reliable enough, to permit even the roughest sort of quantitative statement concerning the value or the volume of the general trade of either country, they are sufficient to indicate that French trade was growing much more slowly than English, and that there could not have been an increase in shipbuilding in France comparable to that in England.

In the sixteenth and seventeenth centuries traders wanted seagoing craft for one of three purposes: for fishing expeditions, for foreign and for coastwise commerce. The English market for sea-

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the later century, a relatively greater proportion of large ships were built, but it may be doubted whether this had greatly altered the percentage of large to small craft by 1629.

[62] Cf. Nef, *Rise of the British Coal Industry*, I, 387–89, 393.

[63] Werner Sombart, *Der moderne Kapitalismus* (4th ed., 1921), I, 762.

food probably grew more rapidly than the French, but, to the despair of English pamphleteers, anxious to have their nation strong at sea, Dutch busses and smaller craft, manned by Hollanders, brought the larger proportion of the herrings and the salmon eaten in England. France was possibly somewhat less dependent than England on foreigners for sea-food. While Dutch fishermen caught most of the herrings for the French as well as for the English market, French fishermen, particularly the Basques and the Bretons, firmly established the important place in the Newfoundland cod fishery that the Bretons have retained ever since.[64] By the beginning of the seventeenth century every considerable port in western France had its *terre-neuviers*. Travelers who visited Saint-Malo saw them in the spring setting out to sea in scores with all the food and fresh water they could carry, or, in the autumn, watched them return to port, each with a sailor or two less on board. In Mediterranean waters the little French fishing boats, which put out early in the morning for a day's work at dragging the nets, had nothing to fear from foreign competition.

While the demand on shipbuilders for new fishing craft may have grown more rapidly in France than in England, in spite of the slower growth in the market for sea-food, the demand for new merchantmen to engage in foreign trade certainly increased more rapidly in England. The religious wars interrupted progress in French foreign commerce at a time when English foreign commerce was expanding rapidly, and caused a great, though temporary, reduction in the volume of French trade in certain commodities, such as salt. While English exports of coal to all countries[65] and of cloth to the Baltic[66] increased at least threefold between the sixties and the nineties of the sixteenth century, French exports of salt to the Baltic fell to hardly a third of what they had been.[67] The religious wars undoubtedly held up new construction

[64] Cf. Fagniez, *op. cit.*, pp. 274–75, 324. The English share in the Newfoundland fishery was also considerable (W. R. Scott, *Joint-Stock Companies to 1720* [Cambridge, 1912], I, 203).

[65] Nef, *Rise of the British Coal Industry*, I, 84.

[66] From 1562 to 1566 the annual shipments of cloth of all kinds, entered in the Sound toll accounts as coming from English ports, amounted to 9,793 pieces on the average; from 1595 to 1599 to 34,173 pieces (Bang, *loc. cit.*). Cf. Friis, *op. cit.*, p. 227.

[67] According to Monsieur Charliat, French foreign trade was ruined, and "la marine marchande française ... anéantie en pleine vitalité," as a result of the re-

in France, at a time when there was a great increase in building at English shipyards, and the recovery under Henri IV hardly did more than restore French foreign trade to the position it had occupied before 1560. After Henri IV's assassination, in 1610, while the trade of England continued to expand, that of France suffered another serious setback. This was caused by the partial collapse of the important French commerce with the Levant. The annual value of this traffic apparently fell from about 30,000,000 *livres tournois* in the decade from 1611 to 1620 to perhaps 6,000,000 or 7,000,000 from 1635 to 1648.[68] Meanwhile, the English seem to have increased their stake in the Levant trade.[69] English imports of tobacco from the Colonies and of iron from Sweden grew many fold.[70]

English overseas commerce was evidently expanding much more rapidly than French between 1540 and 1640. That by itself tells us little about the comparative progress of shipbuilding in the two countries, for throughout the century the native merchantmen engaged in the foreign trade of England were probably outnumbered by foreign, and a few of the foreign ships were French.[71] But the situation was not the same as in the fishing trade. There was apparently no branch of the foreign commerce of northern or

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ligious wars (P. Charliat, *Trois siècles d'économie maritime française* [Paris, 1931], pp. 14–15). He does not support this statement by any quantitative evidence, though he could have found some justification for it in the Danish Sound toll records. These show that shipments of salt to the Baltic from French ports fell from an annual average of 17,162 "laests" during the period from 1562 to 1566 to 3,805 from 1574 to 1578, to 5,864 from 1581 to 1585 and 6,129 from 1595 to 1599. But during the period from 1605 to 1609 the average was 15,358, so that the old position had been practically regained (Bang, *op. cit.*, II, *passim*). Nor can we assume that all branches of French commerce suffered nearly as much as the salt trade (see above, pp. 293–94).

[68] P. Masson, *Histoire du commerce français dans le Levant au XVII^e siècle* (Paris, 1896), pp. 118, 131. These figures should not be accepted without some reserve, for they are estimates based on the rents paid for farming the taxes on the Levant trade (*ibid.*, App. VI).

[69] *Ibid.*, pp. xxiv, 125.

[70] See the sequel in the August and October numbers of this *Journal*.

[71] But not all the ships listed as "French" were built in France. We know that French merchants sometimes hired "Hamburgers and Flemings" to bring English coal to Normandy and Brittany (*State Papers Domestic* [Public Record Office, London], Vol. CLVII, No. 32).

western France in which French shipping retained its importance to the same extent as in the cod fishing on the Newfoundland banks. The Dutch were becoming carriers for the French at least as much as for the English, and by the end of the sixteenth century the English ships which carried cargoes to and from France probably more than offset the French ships which took part in English foreign trade.[72] The proportion of all English exports and imports carried in native ships appears to have been increasing somewhat, and it is therefore certain that the rapid expansion in foreign commerce, for which there was no equivalent in France, helps to account for the growing business brought to English shipyards.[73]

There is no difficulty in showing that a direct connection existed between the expansion in shipbuilding and the growth of coastwise trade in the two countries, for that was handled almost exclusively by native ships. And the contrast between French and English development was even more striking in the coastwise traffic than in foreign commerce. The growth in the volume of English foreign trade, though impressive, was not comparable to the growth in the volume of coastwise trade. This was particularly true of the traffic in coal, which required, because of its bulk, more ship's space than any other commodity. Exports of coal increased about sixfold between 1550 and 1640, but coastwise shipments increased at least thirteen and perhaps as much as seventeen fold.[74] In the decade 1551–60, about 26,000 tons were carried annually from Durham and Northumberland to ports in England. By the decade 1631–40, the amount had increased to about 460,000 tons.[75] A new and important coastwise traffic had

[72] Cf. Fagniez, *op. cit.*, pp. 294–95, 323–24.

[73] For data showing the proportion of foreign to native ships in the English export trade in coal, see my *Rise of the Coal Industry*, II, 23–25. The proportion of all cargoes carried in English ships increased greatly in some branches of foreign trade, for example in the export of tin (G. R. Lewis, *The Stannaries* [Cambridge, Mass., 1907], pp. 63–64). In the luxury trade with the Mediterranean, English ships were able to compete successfully with Dutch.

[74] Nef, *Rise of the British Coal Industry*, I, 79–80, 84 (Scottish exports are not included in my calculations); II, App. D (I) *a*, D (II).

[75] *Ibid.*, I, 96.

sprung up in two other bulky commodities—glass and salt—as their manufacture came to be concentrated about the coal fields of the Tyne valley. On the eve of the Civil War about 300 tons of glass and many thousands of tons of salt left Newcastle every year to be carried to other English ports—above all to London.[76]

The capital was becoming more dependent than in the past upon the growing sea-borne traffic for its supplies of food. While England's foreign trade in corn did not increase very much between 1540 and 1640, save in famine years,[77] the coastwise imports at London in non-famine years grew from less than 20,000 quarters about the middle of Elizabeth's reign to more than 60,000 quarters before the end of James I's reign.[78]

No comparable growth occurred in French coastwise traffic. The main cause of the English expansion was the growth of the London market; by the middle of the seventeenth century something like 65 per cent of all coal shipped coastwise from the north of England went to the capital.[79] Paris was not growing nearly as rapidly as London, and while it was reaching out in the north of France and into the Loire valley for its supplies of grain, it continued to depend mainly on the basin of the Seine and the tributary rivers, not only for its fuel but for its food. The French coasting trade in grain remained of slight importance.[80] While many English counties were coming to exchange food for the products of industry, or the products of industry for food, French provinces retained to a much greater degree their medieval economic self-sufficiency.

[76] *Ibid.*, pp. 176, 183.

[77] England was both an exporter and an importer of corn. Exports grew considerably down to the middle of Elizabeth's reign, but declined almost as considerably during the next half-century. Imports were negligible save in famine years, except in the case of London, and, if we leave out the year 1638, the records do not indicate any very striking increase in the London imports between the forties of the sixteenth century and the forties of the seventeenth (N. S. B. Gras, *The Evolution of the English Corn Market* [Cambridge, 1915], pp. 111–12, 101–2, 275).

[78] F. J. Fisher, "The Development of the London Food Market, 1540–1560," *Economic History Review*, V (1935), 47, 50. Cf. Gras, *op. cit.*, p. 319.

[79] Nef, *Rise of the British Coal Industry*, I, 80.

[80] Cf. A. P. Usher, *The History of the Grain Trade in France, 1400–1700* (Cambridge, 1913), pp. 33, 56–58, 61–63, 69–70, and frontispiece.

At the time of the Reformation English coastwise commerce required only a small number of ships. The change brought about by the increase in this traffic was quite phenomenal. By the thirties of the seventeenth century between 300 and 400 colliers, a substantial proportion of more than 100 tons' burden, were employed in the coastwise coal trade from the north of England alone.[81] France had practically no coastwise traffic in coal. Apart from the extraordinary increase in the number of east-coast colliers, there was a large growth in the number of hoys carrying coal along the west coast, and also in the craft engaged in other branches of coastwise commerce, such as the traffic in salt, glass, corn, butter, and cheese. It is evident that by 1635 a large share of the entire English merchant marine—possibly a third or even a half—was employed in domestic commerce.

The growth of the English shipbuilding industry between 1560 and 1640 must have been due in large part to the expansion of coastwise trade. As there was no comparable growth in that branch of French commerce, it is reasonable to conclude that the number of workmen employed in various branches of shipbuilding, and the capital invested in shipyards, had increased much more rapidly in England than in France.

Shortly after he became Louis XIV's *contrôleur-général*, Colbert got the admiralty officials to send him lists of all the privately owned, sea-going ships of over 10 tons' burden in the French kingdom. The results were tabulated in 1664, and they showed a total tonnage of 129,605. The tonnage of craft over 10 but under 100 tons was 73,765, and there were 2,039 ships in this category; the tonnage of the larger merchantmen whose burden exceeded 100 tons was 55,840, and they numbered 329.[82] We know from the lists which M. de Séguiran made in 1633 of the great ships, polaccas, and barks belonging to every port in Provence from Marseilles to Antibes, that the number of Mediterranean merchantmen of 100 tons' burden had decreased. In 1633 there had

[81] Nef, *Rise of the British Coal Industry*, II, 95; I, 391. Cf. Oppenheim, *op. cit.*, p. 271.

[82] Masson, *op. cit.*, p. 134 n.

been perhaps 60 to 75;[83] in 1664 there were 30. But this decrease had undoubtedly been caused by the collapse of the Levant trade,[84] which scarcely affected shipping in northern and western France. The tour of inspection carried out for Richelieu by M. d'Infreville, *commissaire-général de la marine*, to determine the number of trading vessels large enough to be effectively armed in case of war, indicates that at Atlantic and Channel ports there were fewer large ships in 1631 than in 1664.[85] Between the thirties and the sixties a gain in the north and west apparently offset the loss of shipping in the Mediterranean. It is not likely that the French merchant marine as a whole was smaller in the sixties than it had been in the thirties.

By that time England had apparently overtaken France, for

[83] Sue, *op. cit.*, III, 234–37, 254, 259, 264–65, 267, 274, 284–85, 289–90, 294, 299, 302, 309–11. Séguiran's figures are not in tons but in *quintaux*. It is reasonable to suppose that these were ordinary *quintaux*, not *quintaux métriques* as Monsieur Masson has apparently assumed in using Séguiran's lists (*op. cit.*, p. 133). The ordinary *quintal* was a common measure in Languedoc and many other French provinces during the *ancien régime*. It frequently contained only 100 *livres* and never more than 134 *livres* (M. Rouff, *Les mines de Charbon en France* [Paris, 1922], p. lx; Larousse, *Grand dictionnaire universel*). In reaching the figure "perhaps 60 to 75," I have assumed that 2,000 *quintaux* were roughly equivalent to 100 tons.

Séguiran actually enumerated 49 vessels of 2,000 *quintaux* or more. In addition, he grouped some such vessels with a much larger number of smaller boats in his lists for Le Ciotat, Toulon, and Saint-Tropez, without specifying the burden of the individual ships (Sue, *op. cit.*, pp. 259, 274, 285). The number of ships of 2,000 *quintaux* or more included in those lists is quite uncertain, but it was not large, possibly from 10 to 20. An allowance should also be made for the large ships belonging to Marseilles which were not in the port at the time of Séguiran's visit (Masson, *op. cit.*, p. 133 n.).

Séguiran's lists include in all about 650 ships, not counting the little fishing boats which had in some cases a burden of only from 15 to 30 *quintaux* (Sue, *op. cit.*, p. 265). From other lists of the period we should expect that the small vessels of from 10 to 100 tons' burden would outnumber the larger ships by at least 7, and possibly as much as 9 to 1 (see above, pp. 308 n., 314). The result (60–75 large ships out of about 650) which we have obtained by assuming that Séguiran's figures are in ordinary *quintaux* does not seem unreasonable.

[84] Masson, *op. cit.*, pp. 130–34.

[85] In the whole of Normandy and Brittany, Infreville found only about 150 trading vessels owned by subjects, which he thought important enough to be used in a war. Most, but not necessarily all, of them were of more than 100 tons' burden (Sue, *op. cit.*, III, 206–7).

she had at least 400 merchantmen of 100 tons,[86] and probably more hoys and other smaller craft than belonged to French ports.[87] The navies of the two countries seem to have been fairly evenly matched, for the naval program of Richelieu had brought the French marine abreast of the British by 1631.[88] But this revival of the French navy, which had been neglected from 1559 until about 1625, was short lived.[89] England's ship tonnage, therefore, was probably at least equal, and perhaps superior, to that of France in the thirties.[90]

This of itself is not enough to prove that more ships were being built in England than in France. Partly as a result of the invention of the *flute*, the Dutch were able to turn out most ships designed to carry heavy cargoes more cheaply, ton for ton, than either the French or English, and not all trading craft which flew the English flag had brought labor to English carpenters, joiners, mast-makers, caulkers, sail-cloth weavers, sail-makers, hemp-dressers, twine-spinners, ropemakers, shipwrights, compass-makers, and anchorsmiths. The proportion of England's mercantile tonnage that was of foreign build, after the three wars with Holland, has been estimated at from one-fourth to one-third.[91] These wars had brought England a good many enemy ships as prizes, and it is probable that before the middle of the seventeenth cen-

[86] An incomplete list of English ships of over 100 tons' burden, made in 1629, enumerates 355 vessels (see above, p. 308). It does not include ports in Yorkshire, Somerset, Cheshire, and Sussex, and it does not include all the ships from the port of Newcastle. By 1634 the number of ships of 100 tons had almost certainly increased, for 95 new vessels of that class had been added since 1629 (Oppenheim, *op. cit.*, p. 271).

[87] About 13 per cent of all French sea-going craft enumerated in the list of 1664 were of more than 100 tons' burden (see above, p. 314). In England before the Civil War the proportion was probably nearer 10 per cent (see above, p. 308, n. 61).

[88] Oppenheim, *op. cit.*, pp. 251–55, 264–65; Sue, *op. cit.*, III, 201–6; Charles de la Roncière, *Histoire de la marine française*, IV (Paris, 1910), 581 ff.

[89] J. B. T. de Boismêlé, *Histoire générale de la marine* (Amsterdam, 1746), pp. 371, 406.

[90] According to Fagniez, the English merchant marine was already superior to the French at the beginning of the reign of Henri IV (*op. cit.*, p. 294).

[91] Barbour, *op. cit.*, pp. 289–90.

tury the proportion was much smaller. Out of 380 new English merchant ships sent to London for ordnance between 1625 and 1638, only 37, hardly 10 per cent, came from foreign yards.[92] Notwithstanding the economic advantage held by the Dutch over the English shipbuilders, the great majority of English merchant ships on the eve of the Civil War had evidently been launched from domestic shipyards erected with English capital. By this time the largest English naval vessels were generally regarded as superior to those of the Continent, and almost all English men-of-war were built at home. But the French navy resurrected by Richelieu contained several vessels purchased in the Low Countries,[93] and the French merchant marine also included ships obtained abroad.[94] If we consider the navy and the merchant marine together, it is improbable that the percentage of foreign-built tonnage was greater in England than in France.

The early thirties were in England a period of expanding sea trade and of remarkable activity in shipbuilding. During the five years from 1629 to 1633, 95 colliers and other craft of more than 100 tons' burden were launched from English shipyards,[95] almost one-third as many as there were in the whole French merchant marine in 1664. In France the decline in the Levant trade left the carpenters in the Mediterranean shipyards unemployed, and when M. d'Infreville visited Saint-Malo and the other ports of Brittany and Normandy in 1631, he was not impressed by the number of new keels he saw laid down. By this time England, with about a third the population of France, was almost certainly turning out a larger absolute quantity of shipping tonnage. The "revolution" which had put her common glass manufacture at least on a par with that of France, had made her shipbuilding industry several times more important, relative to her population, than that of her neighbor.

[*To be continued*]

[92] Oppenheim, *op. cit.*, p. 269.

[93] Barbour, *op. cit.*, pp. 261, 263–64; Oppenheim, *op. cit.*, p. 264.

[94] Cf. above, p. 312.

[95] Oppenheim, *op. cit.*, p. 271.

SOCIALISM, PLANNING, AND THE BUSINESS CYCLE

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I

INVESTIGATIONS into the purely theoretical problems and possibilities of economic management under a strictly socialist régime have become strikingly popular during the last years, and this, perhaps, for two reasons. The first reason is very obviously the advance of socialist ideas in practical politics during the last decade as the result of growing dissatisfaction with the competitive system which, during the last depression, has spread into all strata of society. Consequently, the need for exploring all theoretical problems involved in the issue between capitalism and socialism has become a very practical one. The second reason for the increasing attention given to the economic problems of a socialist régime is solely theoretical in character. As the economists of all ages have known, perhaps one of the best methods of analyzing and explaining the working of the present economic order and the real nature of its phenomena consists of constructing in our imagination an economic order built on principles which are exactly the opposite of those of our present economic order. By looking at the photographic negative of our economic order we perceive the mechanism, the functions, and the phenomena of the latter very frequently with greater clarity than can be achieved without this comparative method. We learn to distinguish between the essential and the accidental, we eliminate complications which obscure our view or which distract our attention, and by finding the common denominator of the two economic systems we are liable to get deeper and more universal notions. The advantage of this comparative method is so great that there is, perhaps, no economist who would not have wished for a moment to live under a strictly socialist régime just in order to see the mechanism

of a highly differentiated economic society in its bare essentials and freed from its monetary veil. In this way he may even develop a certain theoretical predilection for the socialist régime of his imagination, although his intimate knowledge of the gigantic problems of economic management in the socialist state might make him an implacable opponent of socialism as a practical issue.

It is a noteworthy fact that the recent preoccupation with the theoretical problems of socialist management owes very little to the socialists themselves. It is surprising how little attention the socialists, especially the Marxists, have given to those problems which, as one would assume, should be the main subject of their literary activity. But it is strictly in accordance with the very essence of Marxian philosophy that the whole literature of Marxism is pre-eminently a critical analysis of capitalism, while any curiosity concerning the structure of a socialist society seems to have been suppressed by an almost religious belief in the existence of forces which will inevitably bring about the transformation of capitalism into socialism. Traces of this tradition are still visible today. There is still a tendency to ignore the real problems of socialist management and to take things for granted which need very careful scrutiny. Everybody is familiar with the curious proof of the benefits of socialism which consists of denouncing the shortcomings of capitalism, and we all know how often in all matters concerning socialism and planning a mere term is accepted as a practical solution. This seems especially true for the problem of economic crises and fluctuations.

It is not difficult to show that, whenever the problem of crises and cycles is being discussed in connection with the problem of the economic system in general, there is still a tendency to neglect the question as to whether and in what forms a socialist society might also be subject to economic fluctuations and disturbances akin to those of the capitalist society. As a matter of fact, the question has been very rarely and very cursorily touched upon in the entire literature on crises and cycles. Besides Aftalion, who has dealt with this question in a very brief section of his book, *Les crises périodiques de surproduction*, we find only scattered remarks here or there. After all, the impression is not unwarranted

that the prevailing opinion on this question is characterized more or less by the tacit assumption that a socialist economy (which is, technically speaking, equivalent to a planned economy) has, whatever its shortcomings in other respects may be, at least the advantage of being a cycle-proof economy. This opinion seems to arise from two sorts of confusions.

The first confusion is a real short circuit of thinking. There is, of course, no denying the fact that, on purely theoretical lines, an economic system is conceivable in which the typical disturbing factors of our present economic system are eliminated by a suitable management of the whole economic process in its every detail. In other words, we can perfectly well imagine an economic system in which the different parts of the economic process are so co-ordinated by a conscious state control that a perfect equilibrium is being continuously preserved. But this theoretical possibility of a perfect and continuous economic equilibrium does not help very much unless we consider the conditions and sacrifices of such a co-ordinated economic system. To admit that such a system is not like the *perpetuum mobile*, altogether unimaginable, is one thing, but it is quite another thing to jump to the conclusion that the magic word "socialism" (or "planning") suffices to open the door to this—in many other respects rather dubious—paradise which promises to make the world safe for stability. In other words, it is not sufficiently recognized that those terms are nothing but words which only vaguely indicate the general principle of socialist economy, and it seems to be a safe surmise that the overwhelming majority of socialists and planners have no inkling of the gigantic problems lurking behind those shibboleths. In fact, collectivist economic planning presents so many and such crushing difficulties that it can hardly give any fair prospect of attaining the physical productivity of our present economic system (even in its present deplorable state) and of guaranteeing a harmonious balance of the economic process.

The difficulties of economic management under a socialist régime are so appalling, indeed, that it will in all probability lead both to diminished productivity and to a greater lack of economic balance. It is important to notice that these two effects are closely

interrelated. But it is also a noteworthy fact that the economic disharmony which promises to become a chronic ailment of the socialist economy will be markedly different from the temporary disharmonies of the capitalist economy. This difference can be characterized by saying that the economic disharmonies of the socialist economy will not become manifest at the place of its origin as the disharmonies of the capitalist economy do, but rather be shoved from the economic apparatus off to its periphery, especially and in the last resort on the shoulders of the consumers, with far-reaching repercussions.[1] As it were, the original tumor will probably breed metastases in the more distant parts of the economic body. There will be no more bankrupt firms, and, given a certain inventive faculty for disposing somehow of embarrassing masses of human beings, there will not even be unemployed as we know them today. Our eye will be spared the unpleasant aspect of open abscesses, but this will be due to a therapy which drives germs into the arteries and through them to the distant parts of the body. In other words, getting rid of the superficial aspects of economic disharmony does not mean that we get rid also of the innate economic disharmonies themselves. What it means is rather that we shall have destroyed the machinery which registers the place of their origin by bringing them to the surface. We will not only have destroyed that and thereby made almost impossible a right and timely diagnosis, but we will also have made inactive those forces which, under our present economic system, work automatically toward removing economic disharmonies. The economic machinery will continue to "work" in a way, but the population, besides being deprived of elementary personal liberties, will have to bear the consequences of protracted economic disharmonies by being worse off than before.

"Crises" in the socialist state of perfect planning will be characterized, then, by the fact that people will suffer by them as consumers rather than as producers, while the economic apparatus

[1] It should be noted that this shifting of the impact of economic tensions and miscalculations from the point of its origin and manifestation to other parts of the economic body is also characteristic of those more radical state interventions which will be called "non-conformable interventions" later on in this article.

itself will show, at best, the outward appearance of being in some sort of order. But the latter, as already indicated above, is not an advantage but a great disadvantage as compared with capitalism. Hence the result which we are most likely to get will be as follows: The socialist system of perfect planning will probably succeed, in a very short time, in turning the paradoxical "poverty amidst plenty" of the capitalist crisis into the more solid and more respectable "poverty from shortage" of the socialist "crisis." Since the innate economic disharmonies, however, will be a lasting feature of this system, the poverty is bound to become just as chronic as the corresponding disharmonies. What we get in exchange, then, for capitalism with all its shortcomings will be poverty and disharmony greater than ever before and becoming chronic into the bargain—and that without the economic, political, and personal liberties for which even the poorest unemployed in the capitalist countries will regretfully yearn when it is too late. It is, perhaps, pertinent to add that the color of the political flag under which the socialist system of perfect planning will be launched makes, of course, no difference whatever.

So much about the first confusion, the ultimate source of which, perhaps, is the human weakness to compare the concrete shortcomings of a present thing which we possess with the abstract perfections of an imaginary thing which we do not possess. The second confusion is also of a rather universal type and is closely related to the first. It belongs to that group of attitudes which is characterized by a common failure to distinguish between phenomena which are strictly confined to the competitive economic system and those which, barring differences in form, are connected with any highly differentiated society, whether capitalistic or socialistic. Such a failure operates mostly to the advantage of the socialist propagandist, who promises to combine the higher productivity of a highly differentiated society with the idyllic traits of an undifferentiated society. Since our economic system is the first in which a highly differentiated society makes its appearance on the scene of history, it is easy to understand why many people are tempted to heap all the blame for the inevitable drawbacks of a highly differentiated society on capitalism, and to seek refuge

from them in socialism, without realizing that they are hitting the wrong thing. They are confusing the principle of differentiation which marks both capitalism and socialism as compared with the precapitalistic economic systems with the method of co-ordination in which socialism differs from capitalism. They do not like capitalism because of its centralization, its specialization, its complications, its lack of simplicity and spontaneity, but since socialism appears as the negation of capitalism they take it for granted that a socialist régime will be free from those capitalistic traits. They do not realize that in all these respects socialism is exactly in the same class with capitalism. And, of course, they do not realize that in fact socialism will take us still farther away from the innocent stage of economic history which the world left behind by passing to capitalism.

Thus we reach the climax of confusion when the very men who are indefatigable in attacking the rationalistic, mechanistic, and differentiated character of industrialism and urbanism of our age are wallowing in schemes for economic planning, organization, and regimentation[2]—a confusion which makes a great part of the more popular economic writings of the present day simply unreadable. In order to demonstrate the confusion by an example, let us note that a great part of the things which, in our economic system, provoke criticism are by no means the fault of capitalism but that of big enterprise which goes far to destroy personal independence, spontaneity of decisions, variety of action, and individual craftsmanship, and which creates the proletarian in the well-known meaning of this term. While much can, and perhaps should, be done to reorganize our present capitalistic industry in such a way as to free it of the worst aspects of bigness and centralization, there is every reason to expect that a socialist régime would make matters much worse than they are today, since then everything would be amalgamated into one great enterprise where the last trace of independence and spontaneity will be destroyed, including the possibility to choose among different employers.

Applying this explanation of the general character of the second

[2] Cf. the present author's article on "Fascist Economics," *Economica*, February, 1935.

confusion to our problem of crises and cycles, we get another and very important reason for the common error of assuming that crises and cycles are a purely capitalistic phenomenon. It is the familiar mistake to draw the line between capitalism and socialism instead of drawing it between the undifferentiated type of economic society and the highly differentiated one—or, historically speaking, between capitalism and the precapitalistic systems. It is obvious that the ultimate origin of economic disturbances of the present type is to be sought in the high degree of differentiation of our economic system, in the very extended scale of the division of labor, and in the complicated structure of production, especially in its roundabout character. In other words, the ultimate origin of the economic disturbances of the present economic system lies in facts which distinguish capitalism from precapitalism, not capitalism from socialism. The economic system has become so complicated that to attain a continuous and perfect co-ordination is a problem which capitalism and socialism have equally to face. It can hardly be emphasized too much that every economic system, no matter how organized, which is based on a very extended scale of the division of labor and on a technique and structure of production as complicated as the present one, is bound to be exposed to all sorts of dynamic disturbances. These constitute the price which we have to pay for the greater productivity of a highly differentiated economic society. So much is obvious. But it is also obvious that it is a very general truth which does not provide more than a mere starting-point for further investigations. It would, of course, not be defensible to deny that the peculiar principles of the structure of the capitalistic system—competition, money, market, freedom of choice and action, etc.—are leading to special disturbances which might be avoided by attenuating their activity or by applying different principles. It is the analysis of the disturbing influence of those principles which constitutes the main body of the theories of crises and cycles.

II

As has been remarked above, most cycle theorists do not incorporate a theory of the dynamics of a socialist system into their

theory of crises and cycles. It would, of course, be possible to fill this gap by analyzing the bearing of the different cycle theories on a socialist régime, but to do this is beyond the scope of this article. Some purpose, however, may be served by examining the applicability to a socialist régime of that theory of crises and cycles which seems to me the most plausible one, and comparing it, from this angle, with similar theories. It goes without saying that this can be done here only in a rather sketchy way.[3]

The theory of crises and cycles which I prefer may be conveniently labeled as a *monetary overinvestment theory*. Its main drift can be summarized as follows. The cause of a major disequilibrium of the economic process is an excess of real investments in fixed and working capital in the sense that the rate of investment has increased in a greater volume and in a quicker tempo than is compatible with the preservation of economic equilibrium. The proportion in which the productive forces of the economic system are being devoted to the production of consumption goods or to that of capital goods, i.e., the proportion between consumption and accumulation, can vary, in magnitude and tempo, only within rather narrow limits without engendering disruption and lack of co-ordination. In order to indicate the nature of this disequilibrating process it may be sufficient to allude to the "principle of acceleration" which has been explained by many cycle theorists and which has been made particularly familiar by Professor J. M. Clark.[4] Leaving aside for the moment certain refinements and qualifications we may say that, according to this proposition, any increase in the general activity of the economic system will have the tendency to produce a disproportionate expansion in the higher stages of production, the rate of expansion growing with the

[3] For a fuller treatment see the following writings of the present author: "Kredit und Konjunktur," *Jahrbücher für Nationalökonomie und Statistik*, March–April, 1926; *Die Theorie der Kapitalbildung* (Tübingen, 1929); *Krise und Konjunktur* (Leipzig, 1932); and especially his forthcoming book in English, *Crises and Cycles* (London).

[4] "Business Acceleration and the Law of Demand," *Journal of Political Economy*, March, 1917; and also the same author's books, *Studies in the Economics of Overhead Costs* (Chicago, 1923), and *Strategic Factors in Business Cycles* (New York, 1934).

stage of production, i.e., with its distance from the sphere of consumption, while the opposite is true for any decrease of the general economic activity. The reasons for this intensified impact of variations in the general economic activity on the higher stages of production are to be sought: (1) in the fact that any increase of the productive equipment of the country makes necessary (in the absence of excess capacity) a further increase of the productive equipment in order to produce the initial increase, and (2) in the fact that there is also a corresponding tendency of an intensified increase of stocks. In other words, the process of acceleration (intensification) consists of a disproportionate growth both of fixed capital and of working capital. In this way the whole structure of production tends to grow top-heavy, and this top-heaviness—the disproportionate increase of production in the upper stages of production—can be maintained only if the increase of demand in the lower stages goes on at the same rate.

That is the general proposition, and the monetary overinvestment theory does not yet contain a monetary element. Overinvestment in the sense explained above can, indeed, develop in every highly differentiated system, provided that the volume of "saving" (in the broadest sense of a curtailment of current consumption relative to accumulation) is being allowed to expand, in magnitude and in speed, at a rate which is no longer compatible with economic equilibrium.[5] This conception of overinvestment, then, leads to the conception of oversaving which, in view of possible misunderstandings, must be clearly distinguished from "oversaving" in the sense of the Keynesian theory. While in the latter oversaving is spoken of with regard to an excess of saving over investment during the depression, it is here an excess of saving occurring during the boom period, not relative to investments, but to the capacity of the economic system to adapt itself to a rise of savings which are being invested. It is important to keep this in mind.

Oversaving in this sense is, of course, an essentially dynamic concept, not a static one. Statically there is no maximum rate of

[5] The proposition could, in miniature, be worked out also for the Crusoe economy where some points would come out with particular clearness.

saving as such which must not be exceeded if disequilibrium is to be avoided. In this sense of long-run conditions a problem of "oversaving" certainly does not exist. But a problem of "oversaving" appears if the rate of saving is rising so suddenly and in such a degree that it leads to overinvestment. The balancing forces of the economic system can take care of a rise of the rate of saving if it does not exceed a certain maximum of speed and magnitude; beyond that point the equilibrium will be upset. Now the question to be raised is this: How is such a steep rise of the rate of saving conceivable in our economic system? In answering this question, the crucial point is that the normal source of the formation of capital, viz., voluntary saving of individuals laying aside a part of their incomes, can hardly give rise to a sudden and substantial increase of savings. It has in the first place to be observed, however, that once the upswing of the cycle has been started forces are set into motion which work for a substantial increase of voluntary savings. In this respect it seems sufficient to refer briefly to the general rise of incomes during the upswing, which corresponds to the increase of the social net product made possible by the mobilization of idle productive reserves, at least during the first phase of the upswing. This is tantamount to saying that, up to a certain point, the upswing of the cycle is providing by its own momentum an increase of the subsistence fund which is the "real" counterpart of the financing of the additional investments. In so far the curtailment of consumption in favor of accumulation is not absolute, but only relative in character, a fact which explains the well-known phenomenon that during the upswing and up to a certain point consumption and accumulation, reckoned in absolute figures, are both rising without any visible monetary strain. This is, by the way, also a fact which is irreconcilable with the whole trend of the post-Böhm-Bawerkian theory of capital, which treats consumption and accumulation as strict and absolute alternatives. A second factor which contributes powerfully to an increase of savings during the upswing is the change in the social structure of incomes which is characterized by an expansion of profits and other variable incomes relatively to the less variable incomes, and which is, therefore, equivalent to a rise of

the incomes more likely to be saved rather than spent. In addition to this, the increasing importance of the entrepreneurial form of capital formation ("self-financing") noticeable during the upswing adds enormously to the aggregate of savings exactly in this phase of the cycle, so much so that there are even writers who consider this tendency as one of the major causes of the boom.[6]

But important as all this undoubtedly is, it is not sufficient to account for the rate of saving rising so suddenly and so substantially as to set into motion the process of overinvestment regularly and in the dimensions as we know them, to say nothing of certain other characteristics which, being of a monetary nature, cannot be explained in this way. All those factors which have been enumerated above are certainly of great importance for reinforcing the process once it has come into motion, but it would be unwarranted to claim more for them. It seems safe to say that the rise of savings and investments brought about by them will generally be digestible for our economic system without leading to grave maladjustments for the system as a whole. In order to grow to dimensions likely to upset the general economic equilibrium, savings and investments must be forced up by a much more powerful mechanism. For this purpose some kind of coercion seems indispensable, and it is here that the monetary factor comes in, so that the overinvestment theory becomes a *monetary* overinvestment theory. For the machinery of coercion in forcing up savings and investments which is inseparably connected with our economic system is provided by the well-known process of credit expansion. It is the same phenomenon which is otherwise known as "forced saving," and which for the rôle played by it in the mechanism of the business cycle well deserves the central place attributed to it in recent years. It must not be overlooked, however, that credit expansion is not the only imaginable kind of coercion, but merely that kind which corresponds to the general structure of our economic system, especially in so far as it is characterized by general spontaneity and by the subtlety of the market process. In a socialistic society it may be replaced by open

[6] Cf. Francesco Vito, "Il Risparmio Forzato e la Teoria dei Cicli Economici," *Rivista Internazionale di Scienze Sociali*, January, 1934.

force exerted by the state, with the effect that the population would be driven, directly and authoritatively, to forego possibilities of consumption in favor of accumulation. Since this is also "forced saving," it would be better to distinguish between *monetary forced saving* as it characterizes our economic system and *authoritarian forced saving* which corresponds to it in a socialist system. The machinery of coercion which, in our economic system, is represented by the banking system with its checks and overdrafts will, in the socialist system, consist of the state police with its rifles, dungeons, and concentration camps.

If our view as to the importance of the principle of acceleration is right, then it will in principle make no difference whether the amassed investments which constitute the essence of the boom and at the same time the germ of its breakdown are made possible by one or the other kind of forced savings. For this reason, also, an investment boom financed by authoritarian forced saving could not escape the same fate as that financed by monetary forced saving, since in both cases, according to the principle of acceleration, the progressively growing scale of investments would necessitate a progressively growing scale of savings until the saving capacity of the nation would be exhausted and, consequently, a more or less painful readjustment become necessary. In other words, the monetary aspect of the causation and also of the breakdown of an investment boom financed by monetary forced saving (credit expansion) represents only a special form which corresponds to the general structure of our present economic system, while in a socialist society this aspect would be replaced by that of authoritarian forced saving which corresponds to the general structure of the socialist system. Consequently, the business cycle of the capitalist system is only a species—very interesting and especially well developed—which belongs to the larger genus of disturbances by overinvestment which may be present in any highly differentiated economic society, no matter how organized. It is that species which concerns us directly as a matter of most practical importance, but to treat it merely as a species belonging to a larger genus is more than a sort of intellectual amusement, since it gives the right perspective to our understanding of

the real nature of the capitalist cycle and to a comparative valuation of the alternative economic systems. In this light, also, the relative value of the monetary theory of business cycles comes out clearly. It is that theory which provides an indispensable element for the explanation of the capitalist form of the overinvestment cycle, and as such, and with necessary qualifications, there is nothing wrong with it. On the other hand, however, it must be deduced from the universal character of the overinvestment cycle that the monetary theory of business cycles is not more than a sort of Euclidean geometry among other, non-Euclidean, geometries.

Let us look at the question from another angle, in order to understand fully the universal character of the problem which the socialist as well as the capitalist society has to face and which is at the bottom of the cycle phenomenon. Suppose that in one case as in the other new technical possibilities present themselves, such as the automobile or the radio. There is an identical situation in both systems, as both are confronted with the dilemma as to whether those possibilities are to be exploited to the full at once, with the steep rise of investments which this course involves, or whether a smoother rise of investments is to be preferred at the cost of a slow and gradual realization of the technical possibilities. Both systems have to choose between progress or stability, and it is difficult to say beforehand which is to be preferred. As far as capitalism is concerned, everybody knows that there is implanted in it a certain *horro vacui*, i.e., a tendency to respond to strong incentives for new lines of investments to the utmost limit. Once the railroad had been invented, it took only a few successive investment waves to cover the earth with the mileage necessary for convenient railroad communication everywhere, but, to be sure, those waves had their unpleasant troughs. A steep rise of the investment curve is a disturbing element and there are good reasons why an attempt should be made to smooth it out; but it is difficult to see how a socialist society could avoid having to face and to solve the same problem—after the successive investment waves of capitalism have led to such an advance of the technique of production that a socialist experiment could start from a very high level of general productivity.

Against this proposition it might be objected that it rests on rather doubtful ground, since monetary forced saving and authoritarian forced saving cannot possibly have the same effect. Many will find it very difficult to believe that authoritarian forced saving will lead to conditions essentially similar to those of a capitalist investment boom brought about by monetary forced saving. Is it possible, they may ask, that raising taxes in order to speed up investments will produce conditions which have anything in common with a boom? Will not just the opposite effect ensue? Questions like these, however, betray a confusion which can be avoided if we bear in mind that the working of the two kinds of forced saving can be studied only within that economic system to whose structural principle the one or the other corresponds. It will not do to say that authoritarian forced saving when applied within the capitalist system will kill a boom rather than provoke it. For as long as the system is capitalist, it must rely on the behavior of the entrepreneurs, which authoritarian forced saving will probably influence in such a way as to diminish private investments and to damp the general economic activity. That is to say: authoritarian forced saving is antagonistic to the structure of the capitalist system. On the other hand, since the capitalist system rests on spontaneous decisions of the entrepreneurs, monetary forced saving is particularly well adapted to it, for it makes a rise of the investment rate possible by aid of a mechanism which, by enhancing the chances of profit, is apt to influence the entrepreneurial attitude in such a way as to enliven the general economic activity. There is strong reason to suspect that this *modus operandi* of monetary forced saving is a distinct advantage of the capitalist as compared with the socialist system, since it is very doubtful whether the all-embracing bureaucracy of the socialist state can provide a sufficient substitute for the spontaneous and general rise of the economic activity which is concomitant with the capitalist mechanism of forced saving. It is, perhaps, this circumstance which explains why the rise of investments in a capitalist upswing usually stimulates productive activity to such a degree that, in spite of increasing accumulation, consumption does not fall, but markedly rises—the well-known "paradox of capitalism," which presents a case of eating the cake and not only

having it, but of having still more of it while eating. It remains an open question whether the recent Russian experience of the first "Five-Year Plan," with rising investment and decreasing consumption, might not have an even deeper and more general significance.

There is a final point which must at least be mentioned in this connection. It concerns that part of our thesis which deals with the inevitability of the breakdown of overinvestment. It will be recalled that it is the principle of acceleration which explains why the structure of production must sooner or later become top-heavy, and thus at an increasing rate lead the economic system into an impasse. Is this really inevitable, under all conceivable circumstances? It seems difficult to answer this question in the affirmative without several qualifications. While it is impossible here to deal with these qualifications at greater length, it seems indispensable to draw attention to the important fact that the working of the principle of acceleration will be mitigated by the replacement demand which, with a certain lag, grows with the increase of investments and thus tends to put the additional investments on a more stable basis by making them less dependent upon new additional investments. The overhanging parts of the structure of production are so far, as it were, being supported from beneath. This secondary demand for production goods which is being "induced" by increasing investments is not dependent on a continuous and progressive increase of the primary demand but only on its steady level; it therefore is able to take care, to some extent, of the problem of permanently maintaining the top-heavy superstructure. Though there are several factors working against it, it is by no means inconceivable that the growing replacement demand might serve as a parachute for the blown-up structure of production in such a way that the decrease in additional investments will be fairly compensated by the increase in replacement demand. Nor does it seem inconceivable that the business-cycle policy might be so conducted as to coordinate the scale of new investments with the growth of the replacement demand with the indicated end in view, and thus to avoid the precipitous fall. The proper instrument for this intelli-

gent co-ordination in the capitalist system would be an appropriate management of the machinery of monetary forced saving, while in a socialist system the same effect could be achieved directly and authoritatively. It seems to me that this is a point which, being of the utmost theoretical and possibly also practical importance, is in urgent need of further elucidation.

The analysis of this section will, perhaps, gain in clarity if it is compared with other explanations of the business cycle, among which those by Keynes and Hayek command the widest attention at the present moment. Taking first the Keynes approach, we may say that when he makes the rise of the rate of investment above the rate of saving (which, in his definition, does not involve "forced saving") the main causal factor of the boom, he says practically what I have said in stating that it is usually the addition of forced saving to the volume of normal (voluntary) saving which raises investments to a dangerous point. The approach, however, is different, since in my analysis it is not the rise of the rate of investment relative to the rise of saving which is the real cause of instability, but the absolute rise of investments, no matter whether financed by voluntary or by forced saving. For all practical purposes this amounts to the same thing as far as the explanation of the capitalistic boom is concerned. The different approach of Mr. Keynes, however, has two important consequences. The first is that in his analysis the main emphasis is put on a point which, under certain circumstances, may be of only minor importance (i.e., in case the absolute rise of investments is not brought about by a disharmony between saving and investment, or, in other words, by credit expansion). So Mr. Keynes has little to say about the general possibility of overinvestment in connection with the principle of acceleration, especially in a socialist system. This point is related to a second consequence of the Keynes approach. Since he makes no use of the principle of acceleration, he is rather vague about the possible disruption of the structure of production by overinvestment, and is evidently inclined to deny the necessity of a more or less painful process of readjustment. This seems to me the weakest point in his whole analysis. Where his analysis is strongest, on the other hand, is in

its treatment of the cumulative process of depression which, indeed, cannot in my opinion, be better stated than in the terms of the saving-investment approach elaborated by him. This analysis must be highly appreciated even by those who prefer other explanations for the upswing.

While in the case of Keynes the analysis of the upswing is much weaker than that of the depression, just the opposite may be said of Hayek's theory. Its essence is that, while any amount of investment financed by voluntary savings tends to leave the structure of production intact, it is the rise of investments financed by forced saving which upsets the balance so that a subsequent readjustment becomes inevitable. We cannot enter here into the very intricate details of his reasoning, which are bound up with some highly controversial propositions of the theory of capital of the post-Böhm-Bawerkian school. For our present purpose it suffices to remark that, by emphasizing the rôle of forced saving as the driving force of overinvestment Hayek's theory amounts, in its last result, to the same thing as Keynes's theory and my own analysis, at least for all practical purposes. But behind there lie substantial differences. In my analysis, overinvestment by monetary forced saving appears as the special form in which in our present economic system the general source of instability—i.e., overinvestment no matter how financed—becomes a practical possibility.

In Hayek's analysis, overinvestment by monetary forced saving appears as the sole form in which overinvestment as a factor of instability is conceivable. Since in his view the real source of trouble is not too much investing but too little voluntary saving, his theory is, indeed, the most uncompromising example of an undersaving theory of business cycles. According to this theory the same amount of investment which, if financed by forced saving, spells disaster would be harmless if it were financed by voluntary saving or even if the forced saving were replaced later by voluntary saving. In our view, however, it is the steep rise of the absolute amount of investments which matters and not the fact that in our economic system it is credit expansion which makes this rise possible. Consequently, also, a socialist state would have

to face the same problem if investment is being speeded up by authoritarian forced saving. Since this view of the matter is contrary to Hayek's analysis, he must of necessity hold the belief that a socialist system is not exposed to this kind of disturbance, a belief which, incidentally, is not quite in accordance with his views, expressed elsewhere, on the disadvantages of a socialist system. But there are other consequences too. While in my analysis the ultimate breakdown of the boom is ascribed to the working of the principle of acceleration, in Hayek's theory it is the shortage of free capital which puts an end to the boom, and this shortage of capital is regarded as bound to come sooner or later if investments are being financed by credit expansion, unless an improbable rise of voluntary saving in an amount sufficient to replace forced saving occurs at the last moment. To this we would reply that the shortage of free capital at the end of the boom is an undeniable fact and an indubitable calamity, but, by virtue of the working of the principle of acceleration, it does not provide a real explanation, since it is the inevitable result of the whole process of the boom.

III

When a major depression such as that through which we are passing occurs, we are likely to find, however, that profane views on the comparative merits of capitalism and socialism like those developed in the preceding section are treated by public opinion with a great deal of impatience. The longer the depression lasts, the more people are apt to become convinced that only a recourse to socialistic principles—for which many prefer the less provocative term of planning—offers a way out of the impasse. With many this conviction becomes so deep that they assume a priori that a theory which has so little respect for the pious belief in socialism as a system which would redeem us from the curse of crises and cycles must be inherently wrong. It is, perhaps, in order to devote a last section to views like these.

Here as elsewhere the first thing to be done is to clear up a confusion which arises from loose definitions. There is no doubt that the term "planning" owes much of its present popularity to the

fact that it is being used more and more in a sense which covers almost every conceivable activity of the state in economic affairs. Since some sort of activity on the part of the state is being demanded by almost everyone today, this broad usage is very effective in spreading the impression that the world is headed for planning and in uniting under this flag people who mean quite different things. The term itself lends itself readily to such a purpose, since it is difficult to imagine any act of economic policy which does not involve some sort of a "plan." Protective tariffs, public roads or state railroads, hydraulic dams, city planning, and also the monetary or financial policy of governments, are based on some preconceived idea or "plan." If all these things are "planning" then the term becomes absolutely meaningless. Then we would have had planning since the dawn of history, and then, of course, capitalism would also be a planned economy, since the legal and institutional framework of this economic system has also been created more or less on the basis of reasoning involving a preconceived idea of competitive economy as a whole. It has been more or less deliberately planned as a system which once created needed no further planning. Consequently, if the term is to retain any meaning at all it must not be applied to an economic policy characterized by a "plan"—for that is true in the case of any economic policy—but to a definite method of executing the "plan," viz., the method which is the opposite of that of the competitive system. The essence of this method of planning is to replace the mechanism of the competitive market by commands from above, and to transfer the all-important decision over the use of the productive forces of the community into the office of a governmental department. All this proves conclusively that the term "planning" is extremely misleading and badly in need of being replaced by another term which really states its contrast to the working of the market mechanism—whether we choose "Government Managed Economy," "Authoritarian Economy," or even "Red-Tape Economy." As long as we keep, however, to the term "planning" we are at least entitled to demand that it should be strictly reserved to an economic policy which replaces the mechanism of the market by governmental command. In this

proper sense, planning must be distinguished from such interventions which, though they institute interference, still correspond to the inner structure of our economic system by leaving untouched the market mechanism itself and which attain their ends not against its rules but by making use of them. These interventions, which may be called "conformable interventions," range from simple Sunday-rest regulations to protective tariffs; while price fixing, import quotas, clearing arrangements, and exchange controls represent the other kind of interventions, which we call "non-conformable interventions." A good test as to whether a certain intervention belongs to the latter kind or not is the well-known fact that measures of this kind are liable to start a chain of repercussions calling for ever more radical interventions, until we arrive finally at a pure collectivist economy.

The foregoing attempt at clearer definition shows that in business-cycle policy also the alternative is not between laissez faire and planning, but between laissez faire, a conformable business-cycle policy, and planning. If we dismiss the policy of laissez faire as no longer feasible we are left with the choice between a conformable business-cycle policy and planning. Here at last we have a clear alternative which we cannot escape: *either* we must act to overcome a depression by putting again into motion the normal mechanism of reactions of the market economy, *or*, if we think that we must have recourse to planning, we must recognize that we have to replace the entire mechanism of the market by collectivist bureaucratic economy. We must make up our minds as to which way we are going and not count on the possibility of an easy compromise. If we find the alternative of the bureaucratic economy uninviting we have to realize that the success of whatever we may do depends on the reconstruction of the mechanism of the market economy. First of all, we must know that, whether we like it or not, we depend on the entrepreneurs and their optimistic mood. If we drive them into exasperation we must not be surprised if the recovery does not come. A judicious activity in combating the depression is, therefore, not only compatible with foregoing any idea of planning, but, on the contrary, mixing it with planning is a sure way to compromise any success of an ac-

tive business-cycle policy (re-expansion). It must be clearly understood that the whole philosophy of re-expansion as a policy of combating the depression is based on a framework of economic reactions which would be destroyed if a country embarking on such a policy would at the same time try to transform the economic system along socialistic or—what is closely related with these—on autarkistic lines. The experience, especially of Germany since 1933, seems sufficiently to prove that a policy of re-expansion stultifies itself in the end if it disturbs by all kinds of non-conformable interventions the mechanism of economic interactions which it is intended to resuscitate. Perhaps, also, the disappointments during the more experimental phase of the New Deal in the United States must be largely traced to the same source. All the wails over the shortcomings of the competitive system and all the vague yearning for better organized production cannot change the stubborn fact that, as long as we do not take the bold plunge into an all-embracing bureaucratic economy, all measures of planning in the proper sense are likely merely to obstruct recovery. The importance and the truth of this statement are not impaired by the fact that our economic system possesses such an incredible vitality and such an astounding elasticity that it can stand quite a lot of obstructions before it succumbs.

THE VARIABLE RESERVE RATIO

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I. THE NEW LAW: ITS BACKGROUND AND PURPOSE

THE recent grant of power to the Board of Governors of the Federal Reserve System to alter member-bank reserve ratios is a significant step in the development of the technique of central banking control. In England and in most other countries where centralized banking exists, the level of commercial bank reserves is left to the discretion of individual banks; but in this country, with its peculiar decentralized system of many independent banks, minimum statutory requirements have prevailed for decades. This difference in practice has permitted the addition of a new weapon to the arsenal of the Federal Reserve authorities by a mere amendment, without a revolutionary break in American banking tradition.

But the introduction of the variable reserve ratio marks a sharp transition in the theory of the function of commercial bank reserves. Until relatively recent years both theory and law concurred in viewing the primary purpose of legal reserves of member banks to be that of providing immediate liquidity, that is, a reasonable defense against the withdrawal of deposits. In accord with this view, to increase the resistance of the banking system in time of stress or panic, Section 11 of the original Federal Reserve Act empowered the Federal Reserve Board

> to suspend for a period not exceeding thirty days, and from time to time to renew such suspension for periods not exceeding fifteen days any requirement specified in this Act: *Provided*, that it shall establish a graduated tax upon the amounts by which the reserve requirements of this Act may be permitted to fall below the level hereinafter specified. . . . .

It was not until the report of the Federal Reserve Board's Committee on Bank Reserves in 1931, however, that serious consideration was given to the theory underlying member-bank reserves

or to the possibility of utilizing variable ratios as an instrument of credit control.[1] In this report the Committee denied that liquidity was the primary function of member-bank reserve balances; they insisted, on the contrary, that the real basis of liquidity of member banks depended upon the credit facilities supplied by the Reserve banks. In the view of the Committee the primary functions of the legal reserve balances of member banks were (1) to furnish resources to the Reserve banks and (2) to limit and control the rate of credit expansion. Upon the basis of these premises and in light of evidence furnished by the study of a sample group of banks, the Committee proposed a variable reserve ratio to be based in part on the turnover of deposits; the proposal was passed over, however, in favor of a purely discretionary measure.[2]

The dangers implicit in our monetary policy were explicitly recognized by Congress in 1933 when it sought to erect a dike against the threatened inundation of credit by conferring unlimited power upon the Federal Reserve Board to alter, with the president's approval and in the event of an emergency, the reserve requirements of member banks.[3] In the Banking Act of 1935 this power is expanded by omitting the qualifications of "emergency" and "presidential approval," but narrowed by prohibiting any

[1] Intimation of this possibility was made by the Federal Reserve Board in its *Annual Report, 1917*, p. 30.

[2] In place of the 7, 10, and 13 per cent requirements against demand deposits and the 3 per cent requirement against time deposits, all member banks would have been required to carry a reserve equal to 5 per cent of their average daily net deposits plus 50 per cent of the average daily debits to their deposit accounts, the maximum requirement in no case to exceed 15 per cent of gross deposits. This proposed change in reserve percentages was designed not only to provide an automatic control over bank credit by having reserves increase with increasing velocity in time of boom, and decrease with declining business, but also to eliminate much of the arbitrariness and superficiality in the existing classification of banks and of time and demand deposits, since the Committee believed that variations in velocity would reflect automatically and by degree the differences which these classifications were designed to measure. The Committee proposed also to include vault cash (to a specified limit), government deposits, and net amounts due from banks in the reserve calculation for the purpose of eliminating other disparities and shortcomings of existing requirements. The two latter-named proposals have subsequently been enacted into law. *Infra*, n. 49.

[3] Sec. 46 of the Agricultural Adjustment Act.

reduction below existing requirements and by imposing a 100 per cent limit on any increase. Section 19 of the Federal Reserve Act as amended provides:

> The Board of Governors of the Federal Reserve System, upon the affirmative vote of not less than four of its members, in order to prevent injurious credit expansion or contraction, may by regulation change the requirements as to reserves to be maintained against demand or time deposits or both by member banks in reserve and central reserve cities or by member banks not in reserve or central reserve cities or by all member banks; but the amount of the reserves required to be maintained . . . . shall not be less than the amount of the reserves required by law to be maintained by such bank on the date of enactment of the Banking Act of 1935 nor more than twice such amount.

II. THE RESERVE SITUATION

In consequence of the rapid augmentation of commercial bank reserves in 1934–35, a debate on several basic questions of monetary policy has arisen. Should restrictive action be taken to eliminate a portion of these excess reserves? Should an increase in member-bank reserve ratios be utilized for the purpose? What are the general circumstances under which the variable ratio may appropriately be used in conjunction with, or as a substitute for, other instruments of control? Conflicting advice has been offered with respect to these questions. In a letter to the *New York Times*,[4] Mr. S. Parker Gilbert has taken the position that restrictive action is undesirable at this time and that, even if it were desirable, a change in the reserve ratio would not be appropriate. Dr. B. M. Anderson[5] and the members of the Federal Advisory Council,[6] on the other hand, have urged early action, the former

[4] Editorial page, December 18, 1935. For the case against restrictive action, see also *The Guaranty Survey*, January, 1936, pp. 1–3, published by the Guaranty Trust Company of New York.

[5] Address before the Investment Bankers' Association in October, 1935; referred to in an article in *Fortune*, January, 1936, pp. 128–30. Dr. Anderson did not urge the utilization of the reserve ratio exclusively. Mr. Aldrich, chairman of the Board of Directors of the Chase National Bank, urged a combination program of raising reserve requirements and open-market sales by the Reserve banks. See pamphlet entitled *Business Revival and Government Policy* (published by the Chase National Bank), pp. 18–23.

[6] Recommendations submitted to the Open Market Committee late in November, 1935, and quoted in the *New York Times*, December 4, 1935, Financial Section,

recommending an advance in member-bank reserve ratios and the latter advocating open-market sales as the appropriate instruments of control.[7]

The abnormality of the present banking situation is brought clearly into focus when we recall that excess reserves of member banks were almost unknown prior to 1930. During earlier years, varying amounts of member-bank reserves were obtained by borrowing at the Reserve banks; and when additional resources came into the banking system through gold imports and the like, they were utilized either to increase loans and investments or, upon occasion, to retire indebtedness at the Reserve banks. In contrast to this situation in which member banks with aggregate legal reserves running under 2½ billion dollars were continuously "loaned up to the hilt," in January, 1936, member banks were in possession of reserves approximating 5.7 billion dollars of which about 3 billion was in excess of legal requirements.[8]

When the current level of deposits is considered, we find that it approximates that of pre-depression days. In fact, as is shown in Table I, the volume of member-bank net demand deposits and

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p. 33. It was reported in the press that the Open Market Committee favored raising reserve requirements; Mr. Eccles, chairman of the Committee, however, in a statement on November 22 took the position that there were as yet no signs of inflation and that stock-market activity was not being financed by bank credit to any significant extent. See *Federal Reserve Bulletin*, January, 1936, pp. 1–7.

[7] On February 12, 1936, the Council renewed its recommendations, urging in this case, however, an increase in reserve requirements as the first step. See *New York Times*, February 29, 1936, Financial Section, p. 23.

[8] "Excess reserves" refer to balances held on deposit at the Federal Reserve banks in excess of legal requirements; the term does not include correspondent balances. *Infra*, pp. 363–65. Excess reserves reached a new peak of 3.3 billion dollars on December 11, 1935, but declined to 2.7 billion late in December, in consequence of increased currency demands, income-tax payments, and the fact that the December 15 issue of Treasury obligations bought by commercial banks were paid for with balances at the Reserve banks rather than by the usual creation of government deposits on the books of the buying banks. Largely in consequence of an increase of Treasury deposits at the Reserve banks to 1.1 billion in March, 1936, surplus reserves were reduced to 2.3 billion dollars but government expenditures and renewed gold imports again increased them to 2.7 billion by the end of April. Discussed in the *Monthly Bulletin* of the National City Bank of New York, January, 1936, pp. 4–5; also *Federal Reserve Bulletin*, January, 1936, p. 1, March, 1936, pp. 141–43, and April, 1936, pp. 213–14, 264.

adjusted demand deposits (which are said to give a better measure of the cash facilities supplied by banks)[9] are considerably in excess of their 1926–29 levels. For all banks in the United States, on the other hand, total gross deposits were approximately 46 billion dollars in June, 1935, as against 54 billion in June, 1929. More recent reports for all banks should show a closer approximation to

TABLE I

LEGAL RESERVES, CASH, AND DEPOSITS OF ALL MEMBER BANKS*
(In Millions of Dollars)

DATE†	LEGAL RESERVE BALANCE			CASH IN VAULT	NET DEPOSITS		GROSS DEPOSITS‡	ADJUSTED DEMAND DEPOSITS§	DUE TO BANKS
	Required	Excess	Total		Demand	Time			
1926..	2,227	9	2,236	534	18,766	11,173	29,743	15,794	3,935
1929..	2,274	42	2,316	433	18,519	13,242	32,284	16,324	3,688
1931..	2,275	129	2,404	519	18,055	13,548	31,566	15,208	4,785
1933..	1,797	363	2,160	405	14,241	8,732	23,338	12,089	3,292
1934..	2,105	1,685	3,790	473	16,988	9,711	26,615	14,261	4,355
1935..	2,541	2,438	4,979	537	20,899	10,103	29,496	17,530	5,392
1936..	2,747‖	3,033‖	5,780‖	665	22,254‖	10,412‖	32,159	18,801	6,296

*Sources: *Federal Reserve Bulletin* and *Member Bank Call Reports*.

†All items for 1926 are for June 30; for subsequent dates "legal reserve balances" and "net deposits" are daily averages for June except as otherwise indicated.

‡Gross deposits exclude interbank deposits.

§Demand deposits other than interbank and United States government deposits, less items reported as on hand or in process of collection.

‖Monthly average for January, 1936; other items for December 31, 1935.

the pre-depression level for gross deposits, and, though figures are not published for all banks, the volume of adjusted demand deposits has probably reached the earlier level. The volume of loans and investments, on the contrary, remains as yet considerably below that of the 1926–29 period.[10]

[9] Cf. *Monthly Review of Credit and Business Conditions* of the New York Reserve Bank, March, 1936, pp. 17–18, and *Annual Report* for 1935, pp. 20–22; also Currie, *The Supply and Control of Money in the United States*, chap. iii, *passim*.

[10] In June, 1935, total loans and investments of all banks were about 44 billion dollars as against 58 billion in June, 1929; for member banks the figures were 29 as against 36 billion for the two dates, respectively. An equally important change has occurred with respect to the composition of the loan and investment total. Member-bank loans, for instance, are now only about 50 per cent of their earlier amount,

The surplus reserves now held by member banks are capable of supporting a volume of deposits and of loans and investments of extreme proportions. In discussing this matter, an average reserve ratio of 10 per cent is generally assumed, giving an expansion ratio of 10, or a sum of about 30 billion dollars as the amount of additional credit which could be created on the basis of existing surplus reserves. But in fact the average ratio for all banks in 1929 was only 6 per cent,[11] suggesting a potential expansion ratio of nearer 16, and about 50 billion dollars as the mass of additional credit which the banks could conceivably manufacture.

Whether we assume a 6 or 10 per cent or even a higher reserve ratio, with corresponding multiples of expansion, it is equally clear that the existing volume of member-bank reserves is far in excess of the amount which should be permitted to become the basis of bank credit.[12] Moreover, aside from the possibility of

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while their investments are roughly 50 per cent greater, government securities accounting largely for the increase in the investment portfolio (*Federal Reserve Bulletin*). Cf. *Annual Report* of the Federal Reserve Bank of New York for 1935, pp. 16–20.

[11] In June, 1929, for example, the required legal reserve balances maintained at the Reserve banks, plus the cash held by all banks, amounted to approximately 6 per cent of the "gross" time and demand deposits of all banks. Interbank balances, which count as part of the legal reserves for non-member banks, are excluded from both reserves and deposits in this calculation, since their inclusion would result in substantial duplication in counting the reserves of all banks. The 6 per cent ratio excludes, moreover, the effects of possible increases in the amount of money in circulation. No multiple expansion can occur, so far as member banks are concerned, on any reserves utilized in this way. But changes in this connection were relatively small during pre-depression years. The amount of money in circulation at the present time is about one billion dollars greater than in 1929; and it is reasonable to suppose that, starting from this relatively high level, only moderate increases, if any, would be occasioned in conjunction with expanding bank credit during the earlier stages. A similar calculation for all banks for June, 1935, yields an average ratio of slightly above 7 per cent. If the calculation is limited to member banks, on the other hand, we find that they held cash and balances at the Reserve banks of approximately 9 per cent of their "net" deposits in June, 1929, as compared to 10 per cent in June, 1935. The higher percentage in 1935 was ascribable primarily to the relatively rapid growth of demand deposits and of deposits in financial centers where reserve requirements are higher.

[12] Though these ratios have applied in the past and give some idea of potential expansion by commercial banks, considerable uncertainty exists with respect to the reserve ratio and hence the expansion ratio which will apply to aggregate deposits

further gold imports, it should be remembered that the Reserve banks and the Treasury could add large amounts to the prodigious total of reserves now held by member banks.[13] The real issue, however, pertains to the policy which should be followed with respect to the excess reserves which member banks now possess, assuming the co-operation of the Treasury and Reserve banks, without which the whole problem becomes insoluble.

Though comparative figures for earlier years and estimates of potential expansion reveal something as to the extent of redundant reserves, they offer only very rough criteria for gauging the amount which should be sterilized or eliminated. For this reason, among others, it has been argued that we should avoid attempts at prophecy and leave reserves undisturbed, relying upon the willingness and ability of the monetary authorities to meet the danger of overexpansion when, and if, it occurs. In the light of

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in the future. In the event of expanding loans and deposits, changes in the average ratio may be occasioned by a number of factors, among which the following are important: (1) variations in the growth of time as against demand deposits, since lower reserve requirements apply to the former; (2) variations in the demand for money in circulation, since, as has been noted, a relative increase in this connection cuts the expansion ratio sharply; (3) variations in the relative expansion of credit by city banks as against country banks, since the reserve requirements of the latter are considerably lower than those of the former; (4) variations in the relative expansion of credit by member banks as against non-member banks, since the latter are permitted to count deposit balances with correspondents as part of their legal reserves.

[13] It is through the assumed utilization of funds in this quarter that even more fantastic figures for potential credit expansion have been derived. If, for example, on February 29, 1936, the Reserve banks had secured their Federal Reserve notes by United States bonds or other eligible paper to the maximum extent permitted by law (in lieu of utilizing excess gold certificates for that purpose), they would have held excess reserves approximating 4 billion dollars. On the basis of this excess reserve (applying the 35 and 40 per cent reserve requirements to their deposits and notes respectively), they could legally have manufactured 10–12 billion dollars of additional member-bank reserves. Moreover, the Treasury, through the utilization of its existing gold and silver profits, could add in excess of 2 billion dollars to the reserves of the Federal Reserve banks, thereby adding over 3 billion dollars to the possible increase of member-bank reserves. Truly astronomical figures are obtained when 15 billion dollars of potential reserves (about 18 billion if it is assumed that the powers to issue greenbacks, conferred by the Thomas Amendment, are utilized) are added to the existing member-bank surplus and the total multiplied by the ratios of expansion suggested for commercial banks.

these general facts, let us consider the essential points of the controversy as to whether restrictive action should be taken and, if so, as to the means which should be employed.

III. SHOULD ACTION BE TAKEN TO STERILIZE EXCESS RESERVES?

Any attempt to appraise the need for excess reserves and to judge the desirability of early restrictive action must consider the implications of the "reflation" thesis, namely, that general prices should be restored to their pre-depression level. In a period of expanding business the need for bank credit, and hence for reserves, is determined by prices, the velocity of circulation, and the physical volume of trade.[14] Obviously, if the monetary authorities intend to encourage the complete reflation of prices before restrictive action is taken,[15] as one would infer from earlier pronouncements, the need for reserves to support domestic expansion will be correspondingly greater. But against this objective it may be argued strongly that most of the aid which rising prices could give to economic recovery has already been rendered and that attempts to encourage complete restoration of the price level through a loose and easy monetary policy offer, not a panacea for our economic ills, but a threat to such recovery as has been accomplished. Even were the restoration of the 1926–29 price level desirable, to delay restrictive action until this objective had been achieved would involve the danger of considerably overreaching the desired level before the momentum of advance could be checked.

The rate of circulation of money and credit has been cited both as a reason for delaying restrictive action and as a danger of so doing. As long as the turnover of deposits remains low, it may be argued that the volume thereof should be expanded in such degree as to offset, or partially offset, the sluggishness of spending.[16] But this policy, if pursued to extremes, carries with it the danger that increases in the rate of spending and investing may later exceed the limits contemplated by the monetary authorities, and that

[14] This does not take account of the issues raised by technological improvements.

[15] See, for example, the views of the Committee of the Nation.

[16] The "velocity" plan embraced this idea within limits, as has been indicated previously, pp. 340–41.

measures of control may have to be so severe as to undermine business activity, or else that fear of such a result may deter the authorities from taking action at all until matters are completely beyond control.

Attention has already been drawn to the current volume of loans and deposits in comparison with that of earlier years, and it has been observed that, whereas the level of adjusted demand deposits has been approximately restored, the volume of loans remains far below that of pre-depression years. Doubtless some circles would contemplate with approval the restoration of the old level of loans and investments—at least this may be inferred from the defense made in certain quarters of banking conditions in 1928–29 and from the vigorous condemnation of the restrictive policy of the Reserve System during those years. But to those who, with the writer, hold that both quantitative and qualitative excesses occurred during that period, this test of future credit needs certainly does not commend itself.[17] Though space does not permit detailed consideration of the issues pertaining thereto, it does not appear that potential domestic demands constitute a legitimate reason for delaying the sterilization of a substantial portion of existing excess reserves. If one may assume a future level of prices below that of the late twenties and the avoidance of overspeculation, a level of loans and investments relatively lower than in the earlier period should suffice to meet the demands of sound business recovery and the need for existing excess reserves will be correspondingly small.[18]

It is said that the desirability of maintaining continued low interest rates and an abundant supply of loanable funds as a

[17] For opposite views on the banking policies of pre-depression years compare, for example, the writings of B. M. Anderson in *The Chase Economic Bulletin* and of Lauchlin Currie, *op. cit.*

[18] More reserves may be needed if the physical volume of trade should exceed that of the earlier boom period. The outcome depends also on the disposition of the public to invest, as against their disposition to hold deposit balances. The volume of loans and investments, deposits, and required reserves will be less to the degree that the public becomes willing to take over a higher percentage of new and old securities otherwise held by the banks. For comment on government finance, see pp. 349–50.

stimulant to recovery is a reason for delaying restrictive action.[19] But surely no such sum of excess reserves as now exists is necessary to insure low rates of interest and to stimulate banks to increase their loans. Interest rates were very low before the recent tidal wave of gold increased surplus reserves to such proportions. Despite important differences in banking organization, English monetary policy should be instructive in this connection. Though very large additions have been made to the gold holdings of the British Exchange Equalization Account and of the Bank of England since that country abandoned the gold standard in 1931, the gold importations of the Equalization Account have not, at least in the first instance, occasioned a parallel increase in commercial bank reserves. The sale of Treasury bills by the Account in exchange for sterling and the exchange of sterling for foreign balances and gold result in no immediate change in the reserves of English banks. Discretionary sales of gold by the Account to the Bank of England and open-market purchases by the Bank have determined for the most part the volume of reserves coming into the possession of the banks.[20] The reserves of London clearing banks in fact increased from about 180 million pounds in the midsummer of 1931 to an average of 215 million for 1935.[21] Without going into further detail or implying that we could have or should have pursued the same policy in this country, we may infer that England's policy is at least suggestive with respect to the action we might now take. England has avoided the accumulation of a huge volume of excess reserves in the vaults of commercial banks with the accompanying dangers of overexpansion; on the basis of moderate reserves she has enjoyed the aid of low money rates

[19] Mr. S. Parker Gilbert has stated (*op. cit.*) that there is danger that restrictive action would check the business recovery that has just begun.

[20] For a discussion of the operations of the Account see Hall, *The British Exchange Equalization Account;* also Harris, "British and American Exchange Policies," *Quarterly Journal of Economics*, May, 1934, pp. 471–85.

[21] See *Federal Reserve Bulletin*. Net gold imports have been far larger than this increase, suggesting that large withdrawals might occur without disturbing the commercial banks materially.

(comparable to levels in this country) in facilitating government financing and stimulating domestic recovery.[22]

As long as unloaned funds remain in the possession of the great majority of our banks, the writer fails to see why low rates and recovery would be jeopardized by the removal of a substantial amount of the existing reserve surplus. On the contrary, uncertainty has been one of the major obstacles in the way of business recovery. The continuous pursuit of reform measures and the fear of inflation in the monetary realm have tended to counteract the stimulating effects of low money rates and government spending, deterring investment and revival in the durable goods industries. Apart from the possibility of further monetary changes by the administration, the existence of a large surplus of reserves with potentialities of tremendous overexpansion contributes to the perpetuation of fears and uncertainties. If partial sterilization of excess reserves were carried out in an equitable way and in such wise as to avoid misinterpretation, it might well allay fears and encourage the lending and investment of idle funds. There is thus good reason for believing that this measure, while apparently deflationary, would have moderate inflationary results. In any event, there is serious question as to the wisdom of seeking to perpetuate such a low artificial level of money rates as to delay the recouping of losses incurred during the depression by commercial bankers and force them into fixed capital and speculative fields; in that case we should find our recovery bought at too high a price.

Another closely related issue pertains to government finance. Large excess reserves have promoted the sale of government securities to commercial banks at very low rates. These purchases, which have absorbed about one-half of the federal debt, have been an important factor in the growth of commercial bank deposits. In purchasing securities, banks have created deposits in the first instance for the account of the government; but the major portion of these deposits has been transferred subsequently to other agen-

[22] It is said that our failure to abandon the gold standard until 1933 and our banking crisis resulted in our having to go much farther than England in the way of easy credit, etc., to check deflation and promote recovery, but these arguments were more appropriate in 1933 than they are today.

cies through government expenditures. In this way commercial banks and their excess reserves have been utilized for budgetary inflation. Those who view this situation with equanimity and emphasize the feasibility and desirability of the continuance of heavy expenditures by the government maintain, of course, the necessity of keeping the banking system in a highly receptive condition. But in reality the excess reserves involve a double danger: they may encourage the continuance of excessive government spending, and they may ultimately encourage security and commodity speculation. In any case, the proposed control of excess reserves loses much of its point without the active co-operation of the Treasury.[23] But if, as is highly desirable, an earnest effort is made to reduce the government deficit, and government finance becomes subordinate, then the banking authorities should be able to cope with the danger of excessive credit expansion in other fields by a judicious utilization of their weapons of control. The present problem requires, not merely action by the Treasury or the Reserve banks, but active co-operation between them, the one by reducing its demands upon the banks and by refraining from pouring out additional reserves, and the other by taking measures to prevent excessive credit expansion in other fields.

Were the excess reserve problem solely a domestic matter, it might be dealt with more confidently. But when we examine the sources of these reserves, we find that, although they are attributable in part to the large holdings of United States securities by the Reserve banks and to a lesser extent to the decrease of money in circulation and to silver purchases, the increase during 1934 and 1935 is accounted for mainly by gold imports, which amounted to about 3 billion dollars. These imports can be traced back fundamentally to our creditor position and to the "undervaluation" of the dollar. More immediately, the influx is ascribable to apprehensions of war in Europe and to difficulties of the "gold-bloc"

[23] Should Congress yield to the agitation for issuance of government paper money, immediately there would be a large addition not merely to money in circulation and deposits but also to member-bank reserves unless offsetting measures were taken. The use of gold and silver profits to back the projected currency would be a safeguard only to the extent that it provided an upper limit for such issues; the issues would, whether secured or not, accentuate the dangers of both budgetary and credit inflation.

countries.[24] It has been emphasized that we should regard these excess reserves as a "call" upon our market and refrain from "freezing" them by restrictive action.[25] There is the chance that if the policy of sterilization of reserves were carried too far it might have to be reversed because of unpredictable drains; but even if this were the outcome, it would merely conform to traditional central-bank policy. Certainly it cannot be argued in general terms that, because gold moves, no action should be taken on the ground that it may move again.

It appears that the laissez faire argument with respect to gold imports rests implicitly upon one or both of two sets of related assumptions: (1) that the gold influx reflects the movement of short-term balances and investment funds engendered by temporary maladjustments and fears, the abatement of which may shortly lead to large counter-flows; and (2) that the gold movement has been the product of the traditional specie-flow mechanism, which in time will provide its own corrective. Neither assumption appears to offer an adequate basis for rejecting restrictive measures designed to sterilize a portion of excess reserves. If the European situation becomes more settled and international stabilization can be evolved, there is, of course, the likelihood of some gold withdrawals. But available estimates do not suggest that foreigners hold claims against us for sufficiently large amounts to make this a crucial consideration against partial sterilization.[26]

[24] For a discussion of recent gold movements see the League of Nations' *World Economic Survey, 1934–35*, pp. 194–99 and 243–51; also *Federal Reserve Bulletin* December, 1934, pp. 789–91.

[25] Gilbert, *op. cit.*

[26] It was estimated that on January 2, 1935, we owed foreigners on short-term account 573 million dollars as against 1,465 million on December 31, 1931. This change reflected an increase of 86 million in 1934, following reductions approximating 1 billion dollars in 1932–33. Amounts due from foreigners which have fluctuated above 1 billion dollars declined about 100 million, to 976 million, in 1934 (Department of Commerce, *The Balance of Payments in the United States in 1934*, pp. 41–47). Member banks reported deposits due to foreigners of about 450 million dollars on December 31, 1935; this represented a growth of about 300 million during that year and an increase of about 200 million over the total for December 31, 1932 (*Federal Reserve Bulletin*, March, 1936, p. 161). These deposits reflect in part an increase of working balances, depleted in 1931–33, and do not suggest the possibility of withdrawals which would cut deeply into excess reserves.

In so far as the gold influx consists of a return of American funds removed to foreign markets during earlier years and to the degree that it is a manifestation of our basic creditor position, we may expect the gold to remain with us, unless it is driven abroad by the very forces of overexpansion and renewed fears which we seek to avoid. The gold movements resulting from the maladjustments attending exchange depreciation and devaluation can hardly be classed as temporary, since they have disturbed and altered basic equilibriums. The gradual restoration of exchange equilibrium in the case of the dollar vis-à-vis other currencies, for example, through price adjustments or devaluation elsewhere, carries with it no necessary implication of large outflows of gold from the United States comparable to the recent influx, since by hypothesis conditions are thereby being restored which tend to prevent large one-sided gold movements.[27]

The automatic correctives of the specie-flow mechanism may seem to offer logical grounds for non-interference, but in appearance only. Monetary manipulation and the violation of nearly all of the rules of the game, rather than disturbances of the sort envisaged by classical theory, account largely for the gold influx *ab initio*. With the gold standard abandoned throughout most of the world and doubt prevailing even as to our own willingness to permit large gold exports, grounds are lacking for assuming that automatic redistribution will follow moderate expansion in this country; and we cannot afford to countenance severe inflation and create new disequilibriums in the effort to alleviate a maldistribution which has been made worse by monetary policies designed to cure deflation. We were misled in the period after the war because we assumed that much of the gold flowing into this country would be redistributed; to the extent that the gold was permitted to be-

[27] No reliable and up-to-date estimate is available as to the volume of foreign funds which has been invested in American securities. The *net* influx from this source was estimated at 200 million dollars in 1934 (Department of Commerce, *op. cit.*). The continuation of business recovery and the pursuit of sound monetary policies in the United States should, in any event, diminish the likelihood of heavy withdrawals in this quarter. We may expect devaluation (depending on the level chosen) by the "gold-bloc" countries, on the other hand, to bring relatively brighter economic prospects in that area and to result in some net gold exports from the United States.

come part of our credit structure during the period of general suspension of the gold standard, we increased the area subject to shock in our own banking system and were the more embarrassed by the outflow of large foreign balances in 1931–32.[28] It may be argued, therefore, that one of the objects of restrictive action now is to eliminate the risk that an undue portion of this gold, held partly in trust, might become the basis of credit and hence available for export only through a new wave of liquidation. Just as in the earlier period, redistribution may be much slower than is anticipated. If it is desirable to avoid the risk of a reversal of credit policy, some insurance can be obtained by partial sterilization, leaving with member banks an amount of reserves somewhat in excess of that thought to be sufficient for domestic expansion.[29]

IV. THE VARIABLE RESERVE RATIO VERSUS OTHER INSTRUMENTS OF CONTROL

The issues concerning the appropriateness of the several instruments of control raise problems of first importance for the authorities. Judgment in the utilization of particular weapons or combination of weapons and the timeliness of their application determine the success of central-bank policy. Before considering the cases in which the variable reserve ratio may be used to advantage, and particularly whether it should be used at the present juncture, it might be helpful to summarize some of the tentative conclusions which have been reached as a result of our experience with discount rate and open-market policy.

In practice the rediscount rate has been a weaker instrument of control than open-market operations. In this country, although a penalty rate is not inflicted on borrowers, reluctance to borrow is, generally speaking, stronger than the profit motive in determining the amount of rediscounting.[30] The volume of indebted-

[28] Cf. Hardy's analysis of gold movements in the early post-war years, *Credit Policies of the Federal Reserve System*, pp. 193–94.

[29] The major portion of the profits on dollar devaluation is as yet unutilized and is available as a defense against foreign drains. *Infra*, pp. 355–56. The Treasury can also reverse its policy, if necessary, with respect to balances carried with the Reserve banks as against commercial banks.

[30] The cost-profit element has been dominant in our acceptance market.

ness, rather than the rediscount rate, is positively correlated with the general level of money rates.[31] Usually the rediscount rate registers movements already initiated by broad open-market forces. The psychological effect of a changed rediscount rate, though less than in the London market, for example, is in general greatest when member banks are heavily indebted and when sharp and timely changes in rates are made. Though the rediscount rate may be useful as an aid to other instruments of control when member banks are borrowing, it is clearly inapplicable to the present situation in which banks are free from debt and possess large excess reserves.

Open-market operations, on the other hand, formerly regarded as a mere adjunct of the rediscount rate, have for some time been recognized as the principal credit weapon of the Federal Reserve System.[32] The member-bank reserve base, if we assume the persistence of reluctance to borrow on the part of member banks and the availability of sufficient ammunition in the hands of the Reserve authorities, can be altered (without aid from the rediscount rate) through a relatively wide range by open-market operations even under boom conditions.[33] In other words, open-market sales result in less than compensatory increases in member-bank borrowings. If, however, member banks are but little indebted to the Reserve banks and possess excess reserves, purchases by the Reserve banks tend to add approximately the full amount to member-bank reserves and sales tend to withdraw corresponding amounts. Finally, in connection with temporary or periodic changes, such as seasonal or fiscal disturbances, open-market operations can be used more appropriately than rediscount rate changes as an offsetting factor.

Opponents of reserve changes contend that, should restrictive action become necessary, it would be preferable to utilize tradi-

[31] Riefler, *Money Rates and Money Markets in the United States*, pp. 16–36. Cf. also, Currie, who argues that reluctance is weaker in the case of country banks and that it is weakened for all banks under boom conditions (*op. cit.*, pp. 91–103).

[32] Both Riefler and Currie support this thesis. Cf. also Hardy, *op. cit.*, pp. 227–39; Keynes, *Treatise on Money*, II, 234–43.

[33] Harris is critical of this view. See *Twenty Years of the Federal Reserve Policy*, I, 169–74.

tional weapons, advancing the following arguments in favor of open-market sales at the present juncture in preference to a change in the reserve ratios:

1. The Reserve banks should seize this opportunity to reduce their government security holdings, and thus reduce the dependence of the government on central-bank support.

2. Sales of securities by the Reserve banks will draw funds in the main from banks having the largest surplus reserves without penalizing others, at least immediately and directly.

3. The reserve-ratio weapon is an untried device which may have adverse psychological effects, and the authorities should therefore rely upon other instruments of control, reserving the ratio changes for extreme cases.

In the first place, let it be granted that it is desirable for the Reserve banks to reduce their commitments in United States securities. Nevertheless, to sterilize reserves by open-market sales to the degree suggested by the Federal Advisory Council would reduce the portfolio of the Reserve banks to a relatively low level, handicapping the Reserve authorities both with respect to earnings and to future control, for which open-market sales may be the only appropriate weapon. From the point of view of the effects of such action on the price of government bonds, it would be advantageous to inaugurate an active policy of governmental retrenchment concurrently with the sale of securities by the Federal Reserve banks.

The profits derived from the devaluation of the dollar still offer the possibility of a large additional increase in reserves. Governmental authorities have suggested several times that these profits, though being regarded for the time as a "nest egg," would be used in due course. In the summer of 1935 about 700 million dollars was devoted to the retirement of bonds backing national bank notes.[34] It may be intended to utilize the remainder, approxi-

[34] In effect the Treasury exchanged its balances at the Reserve banks (created by the deposit of gold certificates) for the called bonds, and national banks used the funds to provide cover for their notes and redeem the pledged bonds. Though a temporary decrease in member-bank reserves occurred, since some banks redeemed their bonds prior to the date of government redemption, the operation as a whole occasioned little change in the volume of reserves or of money in circulation (*Federal Reserve Bulletin*, April, 1935, pp. 202–4).

mately 2 billion dollars held in the Stabilization Fund, for the retirement of government bonds. If we are to avoid a further Gargantuan increase in the reserve base, with its attendant problems and dangers, it is highly desirable that purchases be confined to securities now held by the Reserve banks.[35] The use of the reserve ratio as a partial substitute for open-market sales at the present time would preserve freedom of action with respect to these highly important matters.

But there is another instrumentality which operates after the fashion of open-market operations, which, moreover, may be a partial substitute for both open-market and reserve-ratio changes.[36] In conjunction with its borrowing operations and its policy of maintaining large balances on deposit account, the Treasury can achieve partial sterilization of reserves by using the Reserve banks as depositaries. The adoption of this policy in December, 1935, resulted in a substantial increase of government deposits with the Reserve banks and a sharp decrease in government deposits with commercial banks. This policy permits temporary sterilization of the sum placed with the Reserve banks, or sterilization for a longer period to the extent that the Treasury elects to make its expenditures by utilizing its commercial bank deposits prior to its Reserve bank balances. The long-run significance of this policy of placing deposits with the Reserve banks depends, of course, on the average balance which the Treasury maintains unused. If the Treasury continues to carry large balances as a safeguard—balances, say, of the magnitude of a billion dollars—then excess reserves can be reduced to that extent below the level at which they would otherwise stand, and the need for employing other weapons will to that degree be reduced. But this policy is an aid rather than a substitute. It is costly to the taxpayer;[37] and it is undesirable that it be followed, and unlikely that

[35] This opportunity might be seized also to retire the greenbacks.

[36] *Supra*, n. 8. A further expedient suggested is that commercial banks assume about a billion dollars of the loans made by the R.F.C. and other federal agencies as a means of slashing surplus reserves (*Detroit Free Press*, April 23, 1936, p. 6).

[37] In the sense that loan funds are locked up and interest rates made higher, all restrictive measures are costly to someone, though these costs may be more than compensated by the obviation of losses through timely credit control. An interesting question of incidence of costs is involved with respect to the utilization of the several instruments of control.

it will be followed, far enough to cope with the excess reserve problem unaided.[38]

The second argument in favor of open-market operations raises crucial questions as to the appropriate time of employing ratio changes. It may be agreed that discretionary changes should be made only at infrequent intervals to cope with abnormal conditions.[39] But what are these exceptional occasions? Some commentators imply that an increase in reserve ratios should be contemplated only when a boom threatens to get out of control. Conceivably, under such conditions a situation might occur in which some of the following factors would dictate an increase in member-bank reserve ratios: (1) if borrowing were so limited at the Reserve banks as to nullify the effects of changes in the rediscount rate; (2) if the Reserve banks were lacking in an adequate supply of instruments for sale on the open market; (3) if the state of the federal finances made heavy sales of government securities inexpedient; and (4) if the sale of government securities would seriously curtail the earnings of the Reserve banks, assuming that we wish these banks to be self-supporting. These considerations, however, indicate in the main a complete miscarriage of central-bank and Treasury policy. Though it goes without saying that timeliness is of the utmost importance in the use of all the weapons of the Reserve banks, the variable reserve ratio promises most as a preventive device. If a boom has been allowed to develop, there would be real danger of engendering a collapse by recourse to so sharp a weapon.

The clearest cases for changes in reserve ratios exist when easier credit conditions must be created to combat liquidation and de-

[38] The policy inaugurated by the Treasury in December has been continued, and it has been rumored that there is an agreement to maintain a minimum balance of ½ billion with the Reserve banks.

[39] Increases in the reserve ratio are likely to prove more disturbing to bankers than changes wrought in their reserve position by voluntary commitments associated with borrowing or open-market operations or by involuntary changes occasioned by the unseen and dimly understood forces of the market. This attitude in itself, aside from administrative difficulties dealt with in later pages, is sufficient reason for avoiding frequent alterations of the ratio when a free choice of weapons is presented. Mr. Gilbert asserts that "the power to alter reserve requirements is likely to be more useful if not used" (*op. cit.*). Mr. Aldrich does "not believe that reserve requirements should be frequently changed"; he would "raise them adequately now, while the excess reserves are very great" and then "let them alone" (*op. cit.*).

pression during or after a crisis, or, as at the present time, to absorb excess reserves. In the former case, credit could be eased even though the Reserve banks were lacking in adequate reserves for large open-market purchases. Moreover, the effects of a reduction in reserve ratios should be more immediate since the increased reserves would be transmitted throughout the banking system simultaneously. For these reasons, earlier reactions should be shown in the condition of interior banks and in the customers' loan market by reductions in the reserve ratios than would be the case if the funds had been poured out into New York and other large cities through open-market purchases by the Reserve banks.[40]

There is, also, apprehension lest the use of the reserve ratio to sterilize a portion of excess reserves would have adverse psychological effects. This argument depends partly on the readjustments envisaged as a consequence of shifting reserves; but uncertainty at this point is, in fact, a reason for utilizing the device now, while the margin in the credit structure is sufficient to absorb unexpected repercussions. Why should psychological consequences have adverse effects upon the business situation at this time or bankers be more critical of good loans merely because they have fewer idle dollars? There is the possibility that if this device were used frequently or if for other reasons an increase in the ratio were anticipated, bankers would attempt to safeguard themselves by carrying surplus reserves as a matter of deliberate policy; such action would necessitate more restrictive lending and under certain circumstances would be desirable. Just now, however, we want liberal lending to support the legitimate requirements of trade, and wish to avoid the creation of unnecessary fears; we desire, on the other hand, to safeguard ourselves against excessive lending and the possibility of undue delay in applying restrictive measures.

Mention has been made of the view that the other weapons at the disposal of the monetary authorities may be utilized with less risk than the reserve ratio and that they are likely to be adequate except in very extreme cases. Reliance is placed not merely on the

[40] Cf. *Federal Reserve Bulletin*, February, 1933, pp. 60–61.

familiar rediscount rate and open-market operations but on the new weapons added by recent legislation, in particular the power to increase margins against brokers' loans.[41] These new powers should aid the authorities in controlling speculative credit and assist in the avoidance of a repetition of conditions such as prevailed in 1929. But they promise to be more efficacious if they are employed or held ready at hand in conjunction with smaller excess reserves.[42] In a sense, the variable reserve ratio is an ax which may be used to hew down the abnormal reserve structure, leaving the planing and sandpapering to other more delicate instruments of control.

V. PROBLEMS OF ADMINISTERING THE VARIABLE RESERVE RATIO

The issues considered in comparing the effects of open-market operations and reserve-ratio changes have already drawn attention to difficulties which would be involved in the administration of the variable ratio. Question has been raised as to the feasibility of utilizing the instrument for "mopping up" excess reserves. Open-market sales to banks tend, in the first instance, to draw funds away from those banks and those sections which have surplus funds for investment, the effects of the loss being gradually extended to other institutions.[43] An increase in the reserve ratio, on the other hand, will have no such differential and gradual sec-

[41] Powers added by the Banking Act of 1933 and the Securities Exchange Act of 1934. On January 24, 1936, the Federal Reserve Board announced, as a precautionary step, a reduction in the loan value of securities to 45 per cent of their market prices in the case of loans by dealers and brokers, the increase in margins to be effective February 1 (Supplement to Regulation T). On March 25, 1936, the Board announced the application of the same requirements to the security loans of banks, beginning May 1, 1936 (Regulation U) (*Federal Reserve Bulletin*, April, 1936, pp. 215–18).

[42] Gregory, writing in 1934 with reference to the surplus-reserve problem, had this to say in connection with the emergency powers in effect at that time: "The use of these emergency powers to increase the minimum reserve requirements of member banks . . . . would make 'open market operations' tell more quickly, and, by forcing the banks to support additional loans by direct borrowing from the Reserve System, would restore to some extent the power of the System to control the rate of expansion" (*The Gold Standard and Its Future* [3d. ed.], p. 121).

[43] If sales are made to the general public, the initial effects are more uncertain.

ondary effects. In the case of open-market operations and rediscount rate changes, particular banks may escape entirely; but general changes in the ratio will affect all member banks directly, irrespective of their particular reserve situation. It is in connection with the distribution of excess reserves and interbank deposits that the strongest objections to the instrument can be raised. Can it be administered in such a way as to reduce reserves without placing an undue burden on particular banks or groups of banks?

Disparity in the treatment of member and non-member banks is implicit in many of the regulatory activities of the Federal Reserve System and indicates the desirability of unified control. Although open-market sales may affect all banks in the first instance, an increase in the member-bank reserve ratio, particularly in the case of country banks, which are more often in direct competition with non-member institutions,[44] would involve an initial discrimination against member institutions. And, if we center our attention on member banks, other difficulties become apparent in connection with the distribution of excess reserves between groups of banks and between individual institutions. Although it might appear, from the fact that New York and other reserve city banks have recently held more than 75 per cent of total excess reserves, that differential advances should be applied against these banks, scrutiny of the percentage figures (Table II) shows that country banks are on a par with the other groups with respect to the relative excess; it was not until the latter half of 1935 that New York City banks came to hold an equal quota relative to deposits and required reserves.[45] But consideration as to the percentage increase which should be made in reserve ratios and as to the desirability of making differential advances raises other questions: (*a*) How far would a given increase in the ratio cut near to or into the reserve minimum of particular banks or groups of

[44] Probably in fact, however, this difference in the first impact of the two weapons on country-member, as against non-member, banks will be less significant, since open-market sales are in practice more likely to be made to large members.

[45] Probably government bond sales and expenditures (which normally involve a heavy transfer of funds from New York) and the prohibition of interest on demand deposits were partly responsible for the earlier lag. The New York percentage grew, as we should have expected, with heavy gold imports in 1934–35.

banks in certain geographical areas? (*b*) To what extent would increases in the ratio lead to a shifting of interbank balances and a redistribution of reserves? (*c*) What treatment should be accorded time, as against demand, deposits; and how would differential changes in this connection affect particular groups of banks?

Further light on excess reserve distribution is given by Table III. Interesting differences will be observed with respect to the relative excess in the several districts. But more significant for

TABLE II

THE DISTRIBUTION OF EXCESS RESERVES BY GROUPS OF MEMBER BANKS*

(Amounts in Millions of Dollars)

Date	New York City		Other Reserve Cities		Country Banks	
	Amount	Ratio of Excess Reserves to Required Reserves	Amount	Ratio of Excess Reserves to Required Reserves	Amount	Ratio of Excess Reserves to Required Reserves
1933, June	69	8.7	198	30.0	96	27.8
December	96	13.1	473	65.7	197	53.2
1934, June	532	61.9	800	96.2	353	85.3
December	556	60.9	800	86.3	392	87.0
1935, June	915	86.8	1,079	106.5	443	93.3
December	1,350	113.4	1,133	102.4	499	114.4

* Source: *Federal Reserve Bulletin.*

our purpose is the observation that all districts, excepting San Francisco,[46] held excess reserves ranging from approximately 74 to 140 per cent. So far as these figures show, increases of 50–75 per cent in the ratio could be made without causing much stress or injustice.[47] Although it is impossible to determine from published sources how closely excess reserves are correlated with re-

[46] For a possible explanation see Harris' remarks made in another connection (*op. cit.* I, 173). On March 18, 1936, reporting member banks in the Twelfth District had 218 million dollars due from domestic banks as against 181 million of legal reserves (*Monthly Review*, San Francisco Federal Reserve Bank, March 28, 1936, p. 22).

[47] The situation suggests that the Board of Governors should be given power to alter ratios by districts. Important questions bearing on the regional mobility of funds are raised at this point.

quired reserves for individual institutions, it seems reasonable to suppose that the great majority of banks possess surplus balances at the Reserve banks and that partial sterilization could be effected by an increase in the ratio without causing serious readjustment. Those banks which report small surplus balances at the Reserve banks would probably in most instances be able to repair any deficit occasioned by an increase in the ratio by reducing their balances with correspondents and without the necessity of borrowing.[48]

[48] As this article goes to press, some interesting facts bearing out this observation, so far as the New York District is concerned, have been released by the New York Reserve Bank in its *Annual Report* for 1935, pp. 27–29. The following table is given summarizing the study:

Percentage of Reserves in Excess of Reserve Requirements	Distribution of Banks Based on—			
	Reserves with Federal Reserve Bank Only		Reserves and Balances Due from Domestic Banks	
	Central Reserve City Banks	All Other Member Banks	Central Reserve City Banks	All Other Member Banks
Less than 25	12	207	4	18
25–49	6	128	5	24
50–99	8	143	9	73
100 or more	12	277	20	640
Total	38	755	38	755

The *Annual Report* of the Board of Governors of the Federal Reserve System for 1935, just released, presents a percentage classification of excess reserves for all member banks on November 1, 1935. A similar classification based on daily averages for March, 1936, is given in the *Federal Reserve Bulletin*, May, 1936, pp. 311–15. The latter distribution shows that about 82 per cent of all member banks held legal reserves 25 per cent or more in excess of requirements and about 67 per cent held reserves amounting to an excess of 50 per cent or more. Of the 1,132 banks reporting excess reserves below 25 per cent, 1,038 were country banks and 77 were reserve city banks. On March 4, 1936, all country and reserve city banks reported approximately 3.5 billion dollars of balances due from correspondents.

Scrutiny of excess reserves held by national banks in individual reserve cities and individual states (country banks only) for December 31, 1935, shows the following distribution of excess reserves as a percentage of required reserves: less than 25 per cent, 9 cities and 1 state; 25–49 per cent, 11 cities and 1 state; 50–99 per cent, 24 cities and 14 states; 100 per cent or more, 17 cities and 32 states. Consideration of the cities and states possessing small surplus reserves shows in practically every instance that banks in those areas held substantial balances with correspondents (Comptroller of the Currency, *Abstract of Reports of Condition of National Banks*, No. 187, pp. 11–13).

Shifts of interbank balances, however, while relieving some institutions, may embarrass others and so alter the character of the excess reserve distribution. Table IV shows in general terms

TABLE III

THE RATIO OF EXCESS RESERVES TO REQUIRED RESERVES BY FEDERAL RESERVE DISTRICTS*

FEDERAL RESERVE DISTRICT	1933		1934		1935	
	June	December	June	December	June	December
Boston	44.2	51.6	144.2	106.3	112.8	139.5
New York	9.3	13.9	60.3	60.4	85.0	110.8
Philadelphia	12.1	16.3	75.1	64.8	67.6	86.1
Cleveland	13.1	48.4	79.3	91.2	86.4	106.1
Richmond	31.4	52.7	117.6	75.2	95.5	122.5
Atlanta	37.4	41.8	53.1	45.6	50.4	73.6
Chicago	51.6	124.3	125.6	110.7	168.7	133.6
St. Louis	42.1	77.8	90.6	100.1	96.7	122.7
Minneapolis	28.8	49.6	65.9	114.3	128.7	115.3
Kansas City	37.1	78.3	86.5	95.8	105.1	109.0
Dallas	31.2	106.8	126.5	120.2	89.9	109.3
San Francisco	12.4	25.6	48.9	48.1	45.2	49.5

* Source: *Federal Reserve Bulletin.*

TABLE IV

BANKERS' BALANCES OF MEMBER AND NON-MEMBER BANKS*

(In Millions of Dollars)

DATE†	ALL MEMBER BANKS						NON-MEMBER BANKS: DUE FROM BANKS
	New York City		Other Reserve Cities		Country Banks		
	Due from Banks‡	Due to Banks‡	Due from Banks‡	Due to Banks‡	Due from Banks‡	Due to Banks‡	
1926	87	1,459	985	2,053	908	423	1,651§
1929	157	1,019	937	1,723	792	350	1,260§
1933	101	1,252	1,205	1,570	702	225	1,689§
1934	97	1,591	1,513	2,163	1,057	300	906‖
1935	133	1,983	1,956	2,630	1,407	344	1,137‖

* Sources: *Member Bank Call Reports* and *Annual Reports of the Comptroller of the Currency.*

† June call date.

‡ Domestic banks only (except 1926), excluding the Federal Reserve banks.

§ Balances reported for all banks by the Comptroller of the Currency with member bank and mutua savings bank figures subtracted.

‖ Insured banks only.

the extent to which the equity in excess reserves is conditioned by the behavior of interbank balances. New York City banks owe to other banks an amount considerably greater than their excess reserves, but the increase of their bankers' deposits over pre-depression levels is substantially less than the increase of their excess reserves.[49] In the event that an increase in the reserve ratio is applied to all member banks, country banks may be expected to make withdrawals from New York and other reserve cities. Even if the increase were restricted to city institutions, other reserve city banks would in some measure reduce their balances in New York, with the result that the excess reserves of other reserve city banks would be decreased by less and those of New York banks by more than the amount indicated by changes in the reserve ratio.[50] If large withdrawals from New York and other reserve cities were probable, then smaller advances in the ratio should be applied to these institutions.

But what are the considerations which must be weighed in attempting to anticipate shifts in interbank balances? The balances carried with city depositaries by non-member banks would not be affected directly by an increase in the ratio. In any case, there would be less likelihood of withdrawals by them, since their balances count to an important extent as part of the legal reserve requirements under state laws. Withdrawals by member banks are likely to occur only to the extent that certain individual banks find their legal reserves reduced to, or near to, the minimum required

[49] See *Monthly Review of Credit and Business Conditions* of the New York Federal Reserve Bank, January, 1936.

[50] Member banks now calculate "net demand deposits" by *adding* together listed demand deposits, amounts due to banks, certified and cashiers' checks, letters of credit and travelers' checks sold for cash, government deposits, and drafts outstanding against their Federal Reserve accounts, and by *subtracting* therefrom the total of all exchanges, items in process of collection, and amounts due from banks (other than balances due from private, foreign, or Federal Reserve banks) (Regulation D, January 1, 1936).

When member banks transfer balances from correspondents to the Reserve banks, they increase their net demand deposits, their reserve requirements, and their reserves. A small portion of the amount transferred satisfies the additional requirement, the remainder going to increase reserve ratios. When depositary banks experience a loss of deposits, the reactions are reversed.

by law. Institutions possessing balances at the Reserve banks adequate to meet the increased requirements are not likely to disturb their accounts with correspondents, since these accounts serve various functions.[51] But they are now far greater than the amounts needed to procure the services of correspondents. We should take into account in this connection the effects which the abolition of interest on demand deposits may have in making depositing banks less reluctant to withdraw their bankers' deposits than formerly, and likewise the fact that further expansion of business and credit will increase the probability of withdrawals by interior institutions in the future to the extent that their surplus legal reserves are sterilized now. If, however, the balances now maintained with city institutions are clearly excessive, and if there is a likelihood of their withdrawal in the future, it may be preferable to have these shifts occur now when a wide leeway exists, bringing excess reserves into the hands of their real owners and obviating the danger that depositary banks may expand credit on the basis of deposits and reserves held temporarily in trust. The issue is not unlike that raised by the recent influx of foreign balances into New York.[52]

A final problem relates to the treatment to be accorded time deposits as against demand deposits. Country member banks hold about 50 per cent of the 10 billion dollars of time deposits reported by all member banks, but they hold less than 20 per cent of the 21 billion of the net demand deposits.[53] It follows that, if differential changes were made in this quarter, any advance in the reserve ratio against time deposits would apply more heavily to country banks and any increase in the demand ratio would place an extra burden on city banks.

The authorities may well consider in this instance the desirability of applying differential changes against time deposits. Space does not permit consideration of the controversy as to whether the relative growth of these deposits is inflationary or deflationary in character; certainly changes in their volume have

[51] Watkins, *Bankers' Balances*, pp. 356–72.

[52] *Supra*, pp. 350–53.

[53] *Federal Reserve Bulletin*, January, 1936, p. 20.

been a disturbing factor.[54] Low reserve requirements have promoted their growth in commercial banks, resulting in an unfortunate admixture of commercial and savings-bank business. A marked increase in the reserves required against time deposits applied to all member banks would diminish the motive for artificial classification and minimize the disturbing effect upon the credit situation occasioned by shifts in these deposits, and it would also contribute to sounder practices by commercial banks. Although action along this line would place the savings departments of commercial banks at a competitive disadvantage compared with savings banks proper, this development need not occasion alarm. The requirement of uniform reserves against all classes of individual deposits, which resulted in leaving the savings-bank business primarily to savings banks, was *not* one of the defects of the pre-war national banking system. Congress should consider re-establishing more uniform requirements with respect to time and demand deposits; some progress can be made by the Reserve authorities with their present discretionary powers.[55]

VI. AUTOMATIC VERSUS DISCRETIONARY CHANGES IN RESERVE RATIOS

Thus far we have been concerned primarily with discretionary changes in reserve ratios as a control device. There seems to be general agreement to the effect that frequent changes in ratios should not be a normal instrument of central banking policy; that changes should be made, if at all, only under special circumstances when other instruments are either inadequate, unavailable, or

[54] Currie, following Keynes, opposes higher reserve requirements against time deposits on the ground that they would cause still wider variations in the community's supply of money when shifts between the two categories of deposits occur (*op. cit.*, pp. 163–67). But this is a matter of degree which the monetary authorities may take into account in their quantitative credit policies, whereas abuses in the lending and investing operations of commercial banks in connection with the present reserve set-up have occasioned evils of a more damaging sort, not susceptible of direct offset by the Reserve banks. There is force in Currie's suggestion (which he confines to demand deposits) that we move in the direction of uniform reserve requirements. The velocity plan would have applied a uniform basic percentage as a starting-point.

[55] Cf. Rodkey, "Banking Reform by Statute," *Michigan Law Review*, May, 1934, pp. 899–900.

otherwise inappropriate. This limited objective is quite at variance with the purposes of the "velocity" proposal, since that plan contemplated changes in reserve ratios in such wise as to exert a continuous and automatic control. Do we wish to consider for the future, as distinct from the immediate banking situation, the adoption of the velocity proposal or some substitute device which can be made to work automatically and continuously?

Mr. Currie raises a fundamental issue when he says that "in such a delicate and difficult task as the determination of central banking policy it would appear to be a safe generalization that automatic rules render more difficult the task of central bankers, while discretionary powers facilitate it."[56] If one accepts the objections which have been raised in some quarters to a discretionary change in the ratio, this generalization is virtually tantamount to the elimination of the variable ratio as a control device. Even if it be granted that the objections have been exaggerated, the difficulties in making discretionary changes remain sufficiently serious to restrict greatly the sphere of usefulness of the instrument unless automatic features can be incorporated.

In the opinion of the writer, as a general principle, the monetary authorities are likely to be more successful if they enjoy the aid of automatic devices which work in the right direction most of the time, thereby limiting discretionary control within a more narrow range.[57] This view of the matter suggests that further consideration should be given to the velocity proposal. The failure of Congress to adopt this device[58] is probably to be ascribed to weaknesses which have been pointed out by various critics and to the lack of a comprehensive study of its operation.[59] Were its shortcomings really so serious as to eliminate it from further consideration? Is it possible to amend it so as to obviate its more serious weaknesses? Though final judgment on these matters must await

[56] *Op. cit.*, p. 177.

[57] This was a merit of the old gold standard; it limited the scope of management.

[58] It was never submitted to Congress as a bill.

[59] Probably the matter has been studied on the basis of groups of banks covering a longer period and giving more attention to functional and regional differences than in the 1931 report, but no other data have been published.

the publication of more complete data, criticisms which have been offered against this device should be examined in the light of the difficulties which appear to be involved in making discretionary changes in reserve ratios.

One of the earliest objections raised was that velocity changes would unduly minimize the liquidity function of reserves—that *variability* or irregularity, rather than *turnover*, should govern the amount of reserves required. A panic situation involving heavy debits for cash or drains to other banks, it was said, would occasion higher requirements under the velocity proposal at a time when leniency and support were needed.[60] Furthermore, the plan would interfere with seasonal elasticity and contribute to greater fluctuations in interest rates. And it was claimed by city bankers that the high velocity of financial and bankers' deposits would result in excessive requirements in the case of institutions possessing large accounts of that nature.[61]

These criticisms of the velocity plan fall into two groups: (1) those relating to the effects of the proposal on the situation of particular banks, and (2) those relating to its effects on the general credit situation. It may be conceded that the Committee unduly minimized the liquidity function, at least in a short-run sense. But regardless of the view on this matter, judgment at this point must depend on the actual requirements which the velocity proposal would have inflicted on particular banks and groups of banks, a matter on which information is lacking.[62] Doubt arises particularly concerning time deposits, which have a very low rate of turnover, and bankers' and financial deposits which may have a very high velocity. Objections have already been raised to the

[60] Anderson and Rodkey opposed the proposal in part upon this ground (Rodkey, "Legal Reserves in American Banking," *Michigan Business Studies*, VI, No. 5, 88–104; Anderson, *Chase Economic Bulletin*, April 25, 1932, pp. 30–35).

[61] It has been stated, moreover, that the Committee erred in seeking to neutralize the average velocity of money in all transactions (speculative, business, and income) as a means of checking cyclical fluctuations; that it is the velocity of deposits in the income sphere which is significant in connection with commodity prices and general business; and that the volume of income deposits should not be radically altered merely in consequence of high velocities in the financial field (Currie, *op. cit.*, pp. 169–71).

[62] Cf. Keynes, *op. cit.*, II, 35–48.

large differential advantage enjoyed by time deposits. The Committee would have reduced this differential in one way by raising the minimum reserve against time deposits to 5 per cent; but in certain cases the average spread would have been increased for particular banks, since some institutions hold a large percentage of time deposits while others have a large percentage of deposits subject to a high velocity.

As was noted above, difficulties exist in the case of the latter type of deposits. Though one may urge that higher reserves should be carried against bankers' deposits (this would occur under the velocity proposal because of their high turnover), because of the responsibility attaching to the custody of such funds, it is highly questionable whether this requirement would be justified in the case of various other types of deposits having a high normal velocity in consequence of business practices. These difficulties could be met in part by the recognition of exceptions to the general formula, by having time deposits, financial deposits, etc., subject to distinct requirements. If separate classification of certain classes of deposits were made,[63] a lower requirement (as a percentage of velocity) might be applied in certain instances to allow for high normal or average turnover. These exceptions could not be put into effect, of course, without increasing the complexity of the plan and without abandoning the automatic classification of deposits which the Committee of the Federal Reserve Board sought to attain.[64]

The desirability of making these alterations in the original proposal and of seeking to apply it to the great volume of individual and business checking accounts depends in the last analysis on the aid which the device can give in regulating the aggregate volume of bank credit. If the plan were inaugurated, a measure of perverse elasticity would tend to arise in seasonal and panic situa-

[63] In this connection it was suggested that member banks be permitted at their option to omit any specific deposit accounts from their computation if such accounts were reported separately to the Reserve Board and if 50 per cent reserves were maintained against them. Referred to in the *New York Times*, April 3, 1932, Financial Section.

[64] Such difficulties would be minimized in considerable measure in a nationwide branch-banking system, since differences between banks would tend to disappear.

tions, whereas the banking-school philosophy should be applied unflinchingly in these cases. Of more moment are cyclical fluctuations. Questions arise at this point concerning the timeliness and direction of change under the velocity plan compared to the existing requirements, but only inferential and uncertain answers can be drawn from the data published. In the test period, 1924–30, the proposed requirements, starting slightly below the prevailing requirements in 1924–25, rose slightly above them in 1927; the proposed requirements were considerably above prevailing requirements in 1928 and 1929. Ruling out the uncertainty as to the incidence on particular banks, the application of the formula would have resulted in more timely and effective control during 1928–29 than was obtained under existing requirements. But the data suggest a serious weakness on the score of timeliness and degree of change prior to the development of the final stages of the boom. In other words, in 1924, when the influx of gold and Reserve-bank open-market policy were swelling the reserve base and releasing expansive forces which the Board made belated attempts to check in late stages of the boom, proposed requirements were even lower than the actual requirements. For this early period the shortcomings of the device on the score of timeliness could have been minimized by the inauguration of higher base requirements at the outset, but difficulties growing out of changes in the volume of reserves appear in even greater degree when the proposal is judged in light of the enormous reserve base of 1935, for the increases have come without corresponding increases in velocity.

These criticisms, though disturbing, do not necessarily warrant final abandonment of the proposal. A strong case could be established for the plan, though it were admittedly not a self-sufficient control, if it could be established on a basis such that (1) it would not involve unfair and excessive discrimination and (2) it would operate for the most part in the right direction. Given these conditions, the variable reserve ratio would render its greatest service during semi-normal or transitional periods, when discretionary changes are inappropriate. The automatic features, moreover, would offer certain definite advantages in principle. They should supply a helpful aid during periods when the authorities ponder

their decisions and hesitate to take positive action. It is probable, moreover, that automatic increases in reserve ratios would be accepted by bankers as an impersonal force of the market, having therefore less disturbing psychological repercussions than discretionary changes.

It does not appear that the operation of the automatic device need mean a more passive policy by the monetary authorities except to the degree that it lessens the occasions for an active policy. Its seasonal and emergency shortcomings would, in fact, necessitate some offsetting operations; abnormal developments might warrant discretionary changes in the reserve ratio as well. If Congress adopted an automatic device of this character, it should also confer discretionary power on the Reserve authorities to alter the basic percentages under special circumstances. It is to be hoped, therefore, that the Reserve authorities will not abandon the endeavor to develop a mechanical formula for reserve changes as a support, and not as a complete substitute, for discretionary policy.

VII. CONCLUSIONS

There remains the problem of deciding what specific action ought to be taken at the present juncture. One might infer from the suggestions made in certain quarters that practically all of the excess reserves should be sterilized. Action on such a scale, however, sterilizing 2½ billion dollars or more of reserves, would sharpen interest rates and leave little room for gold exports. On the other hand, if a substantial surplus is left with the banks after partial sterilization, opponents of restrictive action may assert that the danger of overexpansion still exists, lessened only in degree, and that we are depending, as before, upon the final discretionary action of the monetary authorities. But the task of the authorities in determining the fraction of existing reserves to be sterilized does not differ fundamentally from the task which they face continuously in deciding the volume of member-bank reserves to be added or withdrawn through open-market operations. In the opinion of the writer, the situation would be simplified and the danger of overexpansion lessened if, say, 1½ billion dollars of excess reserves were sterilized. Within these limits the authorities

should be able to cope with the domestic situation effectively by using their other instruments of control, and margin would be left for substantial gold exports.

Considering the fact that injurious credit expansion has not yet appeared, the opponents of immediate restrictive action conclude, on the other hand, that we should wait until there are danger signs before risking action which may jeopardize recovery. But we should have learned by our experience in 1928–29 the importance of timely preventive action. We should remember the obstacles which are likely to be placed in the way of restrictive action once the boom ripens, and the ways in which the weapons of control may be blunted. Even though the danger of overexpansion is not immediate, the longer the range of the forecast the more efficacious it should be. If, as Mr. Hardy has remarked, successful central banking demands successful forecasting,[65] then surely no high order of prescience is needed to reach the conclusion that a substantial portion of existing reserves is not wanted as the basis of future expansion.

Though the uncertain effects of a higher reserve requirement on particular banks and on the distribution of interbank deposits and excess reserves suggest the wisdom of proceeding cautiously, the writer believes that a higher ratio should be utilized as the major instrument for sterilization. The following procedure might be adopted:

1. The ratio might be increased by from 25 to 50 per cent on the average as a means of removing a portion of the excess, open-market sales and the transfer of Treasury balances being employed to sterilize the remainder of the sum indicated.

2. A higher differential advance might be applied against all time deposits, relatively lower differentials being applied against the demand deposits of country banks, as against city banks, so as to equalize as nearly as possible the average advance against total deposits for all classes of institutions.

3. To avoid shock and misunderstanding, the authorities might announce in advance how far they proposed to go in the end and

[65] *Op. cit.*, p. 98.

then proceed by making incremental changes so that the effects could be appraised more exactly before deeper cuts were taken into the excess reserve structure.

An increase in the ratio, after the fashion suggested, should not result in undue shock or place an excessive burden on particular banks. In fact, there are grounds for believing that it would promote lending and investment by diminishing existing fears of overexpansion. The danger of excessive shock will be greater if we wait until signs of overexpansion actually appear. If the new weapon is to be utilized at all, the present situation with wide leeway existing seems to offer an exceptional opportunity to take needed action, and at the same time to acquire valuable experience in the mechanics of the variable reserve ratio.

The possibility of developing the variable ratio into an instrument which may be used as a normal adjunct of central-bank policy is worthy of further consideration as offering the means of supplying a needed automatic aid. Though certain weaknesses inhere in the "velocity proposal," it should not be discarded without further study.

THE ORGANIZATION OF FARM LABORERS IN GERMANY[1]

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THE modern epoch of farm labor organization begins, very tentatively, in the seventh decade of the last century. Just forty years after the six Dorset laborers were deported from England for resorting to combination to raise wages, Joseph Arch, a farm hand of Warwickshire, founded the National Agricultural Laborers' Union. In Germany a year later, at its fifth Congress, at Eisenach (1873), the Social Democratic party decided to organize the countryside.[2] Owing to the vicissitudes which overtook the socialist movement under Bismarck, nothing came of this resolution and it was not until 1909 that the work began in earnest. Following the war, however, in several European countries there was a startling growth in the membership of the agricultural unions. In 1928, of the 365,000 members of the eighteen national farm workers' organizations affiliated with the International Agricultural Workers Federation, 174,000 belonged to the German socialist body. Next largest was the Polish organization, with 47,000 members.[3] At the end of 1929 a total of 260,312 German farm employees were members of unions, and collective agreements governed the conditions of employment of 1,396,933 persons in agriculture.

In the United States, also, there have been attempts to organize farm workers, the most notable being that of the International Workers of the World (I.W.W.) during the decade prior to the

[1] The opportunity to study in Germany I owe to an appointment as Fellow of the Social Science Research Council, 1927 and 1928. For funds permitting subsequent investigations of the German labor movement I am indebted to the Harvard University Committee on Research in the Social Sciences.

[2] W. Schröder, *Handbuch der sozialdemokratischen Parteitage, 1863–1909* (Munich, 1910), p. 252.

[3] *Landarbeiter Archiv*, III, No. 2 (1929), 58.

World War. Since that time the attempts have continued and, despite repeated failure, are at present being pushed vigorously by Communists and other left-wing groups. Even the American Federation of Labor, ordinarily indifferent to the movement, had, by January, 1936, permitted the affiliation of twenty-seven local unions of workers in agricultural and allied occupations.

THE RISE OF THE FARM LABOR PROBLEM IN EAST PRUSSIA

The farm labor problem in Germany is of long standing. Ever since the Franco-Prussian War, during a period of remarkable agricultural development, there has been, on the one hand, a chronic shortage of labor, and, on the other, a state of dissatisfaction with the conditions of employment such as to cause a steady migration from the rural areas.

It was in East Prussia that this problem first made its appearance, upon the great estates which, during the nineteenth century, were the proving ground of the new agricultural technique. Here arose the class of landless day laborers that formed the basis for the agricultural labor movement. Elsewhere in Germany there were never, at best, many members of the farm workers' unions. In Baden, for example, four-fifths of the farm hands belong to the family of the landowner. In Oldenburg and adjacent parts of Hanover and Westphalia, where tenant labor (*Heuerlingsystem*) prevails, relations are such that the desirability of forming closed ranks against the peasant employer hardly presents itself.[4] In East Prussia, Pomerania, and Mecklenburg-Strelitz, on the other hand, the hired laborer makes up the larger part of the working force. Between him and his employer, whom he knows, ordinarily, only in the person of an overseer, a gulf is fixed. From other social groups he is likewise isolated, since there is no class of independent peasants with whom he can fraternize. Opportunities to obtain land are rare. Wages are low, and dwelling conditions unsatisfactory. For fifty years past the East Prussian farm laborers have formed a sort of agricultural proletariat.

[4] W. Wygodzinski, *Agrarwesen und Agrarpolitik* (Berlin, 1928), II, 60; F. Aereboe, *Allgemeine landwirtschaftliche Betriebslehre* (6th ed.; Berlin, 1923), pp. 130–32.

The origin of this class, as Knapp implies in the title of his famous book, was closely connected with the effort to emancipate the peasant.[5] In the fifteenth century the farm hand in the district east of the Elbe was a small peasant who, although he was enveloped in a network of feudal rights and duties, yet enjoyed considerable independence of action. He held land which he tilled in time not claimed for the service of his lord, whose estate was moderate in size. During the three succeeding centuries, however, these small holdings were absorbed, so that great estates arose, such as were to be found nowhere else in Germany, and with them a system of large-scale agriculture, associated with forced labor. This process, known as *Bauernlegen*, or "putting down the peasants," led in Mecklenburg and Pomerania to almost complete disappearance of the small landholders, but in the old Prussian provinces it was somewhat mitigated by measures taken by Frederick William I and Frederick the Great. However, the chief benefits of the emancipation movement, which aimed to establish a class of free property-holding peasants, went to the large, rather than the small, peasants, from whom was withheld, as in the Declaration of 1816, the privilege of commuting dues and services.[6] By the time this situation was in part rectified, through the Act of March 2, 1850, it was too late. Although the legal basis for the dominance of the landed proprietor was gone, the economic reality of the great estates remained. To work them it was necessary to rely upon a new class of farm hands—the *Instleute*, or share laborers. These, in turn, were to give way to the *Deputanten*, farm hands who received fixed pay in kind rather than a share in the crop.[7] It was the latter who provided most of the membership of the agricultural labor unions.

[5] G. F. Knapp, *Die Bauernbefreiung und der Ursprung der Landarbeiter in den alten Teilen Preussens* (Leipsic, 1887), Teil I, pp. 223–31; Teil II, pp. 429–55; C. J. Fuchs, *Die Epochen der deutschen Agrargeschichte und Agrarpolitik* (Jena, 1898), p. 21; L. Brentano, "Agrarian Reform in Prussia," *Economic Journal*, VII, No. 25 (1897), 1–20; C. von Dietze, "Arbeitsverfassung und Aussichten der grössen Güter in Ostdeutschland," *Soziale Praxis*, Vol. XLI, No. 46 (November 17, 1932).

[6] I.e., the *nicht spannfähige*—those who did not own a span of oxen and occupy a regular holding in the arable fields, thus being below the legally established peasant level.

[7] In East Prussia the distinction between *Deputat* worker and *Instmann* was vague, since the former, although he did not work on shares, was in part an inde-

The East Prussian share laborer was, during the first half of the nineteenth century, the typical worker on the great estates. Much of the *Fronbauer*, the socager, clung to him, although legally his labor contract was of a voluntary character. He was hired by the year and housed by his employer on the estate. Seasonal work was of limited volume and was done with the aid of such peasants as could be drawn from the neighboring villages. Usually the *Instmann* was expected to supply, from among the members of his family, the services of one or more laborers (*Hofgänger*, *Scharwerker*), for whom he was responsible as to good behavior, and whose wages were paid through him. Wages were in the form of a share in the harvest and a right to a bit of arable land, or to pasture, with the privilege of selling the products. Thus the *Instmann* had an interest in common with the owner in the successful operation of the estate.

The lord of an eastern estate was at this period no mere employer of labor. He was, rather, the local representative of the political and military power of Prussia. At the same time, as a member of one rank (*Stand*) in a definite social order, he stood in a relationship of mutual interest to peasants and *Instleute*. His concern with his estate was, therefore, not purely economic.[8] As the century advanced, however, the landowner faced the competition of the urban business classes. After 1830, when the first sugar-beet factory was established, he planted less grain, had fewer cattle, and resorted to an intensified agriculture, crop rotations, and the use of machinery. By 1851 there were 234 sugar-beet factories within the area of the *Zollverein;*[9] agriculture had become more seasonal in character and the demand for labor was affected ac-

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pendent producer. Little of his fixed payment in kind was in finished form. His meal he must himself grind and bake; his potatoes, like his flax, he must raise on land provided for the purpose; milk or butter he must secure from his own cow and wool from his own sheep. Since 1900, in East Prussia, as in Silesia, the *Deputat* worker has, in increasing degree, received his wages in the form of consumable products.

[8] M. Weber, "Entwickelungstendenzen in der Lage der ostelbischen Landarbeiter," *Gesammelte Aufsätze* (Tübingen, 1924), pp. 473–77.

[9] Theodor von der Goltz, *Geschichte der deutschen Landwirtschaft* (Stuttgart, 1903), II, 254. A factory had been established at Kunern, Lower Silesia, in 1798, but was abandoned during the war with Napoleon (*ibid.*, I, 472).

cordingly.[10] It grew advantageous for the landowner to free all save a small permanent staff from the obligations which had bound them to the estate the year round, and during the busy season to employ day labor. Especially, as agricultural land increased in potential productivity, did it become imperative for the farmer to free himself from share relationships with peasants and laborers, since he, with his greater facilities, was able to use land to much greater effect than they. Incidentally, as Aereboe remarks, this new system of relying upon migratory seasonal laborers freed the employer from the responsibility of devising methods of production and management such as to maintain a year-round labor supply; it prevented a wholesome participation of the native farm workers in the increasing prosperity of the country, and drove the farm hands into the towns, where they depressed the wages of industrial labor.[11] As a result, at the same time that the demand for agricultural labor was rising and the numbers employed in agriculture were increasing from eight to over nine and one-half million, the agricultural population of Germany was on the decrease. In 1871 von der Goltz, professor of economics at Königsberg, himself a large landholder, warned the great estate holders to beware lest the distress among their laborers make them susceptible to the teachings of the Social Democrats.[12] A decade and a half later grave fears were expressed by Bismarck as to the outcome of the system of reliance upon foreign farm hands. And Max Weber, in an address in 1893, described the great landholders of the east as the most dangerous foes of German nationality.[13]

Such was the development in East Prussia which, according to

[10] F. Dettweiler, *Die Handarbeit in der Landwirtschaft* (Jena, 1905), contains some interesting calculations as to the increase in the demand for labor resulting from the introduction of field crops.

[11] F. Aereboe, *Agrarpolitik* (Berlin, 1928), pp. 164–66.

[12] Theodor von der Goltz, *Die ländliche Arbeiterfrage und ihre Lösung* (Danzig, 1872).

[13] M. Weber, "Die ländliche Arbeitsverfassung," in *Verhandlungen der Generalversammlung des Vereins für Sozialpolitik* (Leipsic, 1893), pp. 71–85; see also "Die Verhältnisse der Landarbeiter in ostelbischen Deutschland," *Schriften des Vereins für Sozialpolitik*, LV, No. 3 (Leipsic, 1892), 790, 796.

Max Weber, transformed a class of milk and cereal consumers, living under a semipatriarchal relationship, into a potato-eating agricultural proletariat. Elsewhere the course of events was of a different character, for nothing is more characteristic of German agriculture than its diversity. As the great landed estate is typical east of the Elbe, so west of that river peasant holdings prevail. Here the smaller family establishments exist much as they were at the time of the peasant emancipation, while the medium-sized and large peasant undertakings have a somewhat greater proportion than formerly of wage hands. But here too, on the large estates, as in East Prussia, the permanent share laborers have been displaced by laborers hired for a year or less, who are paid fixed wages, usually in kind.

CLASSES OF AGRICULTURAL WORKERS IN GERMANY

At the present time, in Germany as a whole, there are four groups of agricultural laborers to be distinguished among the variety of local designations. These are as follows: (1) male and female house and yard servants (*Gesinde: Knechte* and *Mägde*); (2) day laborers by yearly contract (*Deputanten*); (3) occasional laborers without contract; and (4) migratory seasonal laborers.

Of these four classes the first two are today the most generally characteristic, but the proportion in which they are employed varies widely. Upon farms of 20 hectares or less most of the work is done by the peasant proprietor and his family. Upon those of a size from 20 to 100 hectares there are somewhat more non-family than family workers. On farms larger than this the non-family workers prevail overwhelmingly. Farms of a size from 20 to 50 hectares had, in 1933, 407,950 house and yard servants (*Gesinde*) as compared with 78,649 regular day laborers; those of from 50 to 100 hectares had 134,800 of the former and 101,214 of the latter, while on larger farms there were 562,358 regular day laborers and 74,663 male and female yard hands.[14]

The 1,067,426 house and yard servants, although somewhat fewer than in 1907 or 1925, still formed in 1933 the largest single group of non-family farm workers in Germany. Four-fifths of

[14] *Wirtschaft und Statistik*, XV, No. 4 (1935), 14.

them are on peasant holdings, where they live in the house of the employer and are subject to domestic supervision. Of recent years there has been an increasing distaste on the part of young people for this type of labor, so that the *Gesindefrage* has become the characteristic labor problem of the small farmers. The second class, day laborers on yearly contract, numbered, in 1933, 864,853, and, concentrated in the east, constitute the labor problem of the large landholders. Owing to measures taken by the present German government, the foreign migratory workers are now so few as to be negligible; in 1926 there were 135,300 of them in agriculture as compared with 411,706 in 1912–13.

THE DEVELOPMENT OF SOCIAL DEMOCRATIC AND CHRISTIAN ORGANIZATIONS FOR FARM LABORERS

Despite the change in status effected in Eastern Germany during the last century, the task of organizing the agricultural laborers was a hard one. So varied were the types of employment and methods of payment that it was difficult to secure that uniformity of conditions which makes collective bargaining possible. Moreover, despite the leveling influences at work, the social arrangements, even on large farms, retained something of the patriarchal. Although the detested *Gesindeordnungen* were abolished in 1918, their spirit still lived. All sorts of petty social distinctions harassed the union organizer. Even on a small estate there were the forelady (*Mamsell*), the first maid and the second maid, the chief helper (*Grossknecht*) and the lesser helper (*Kleinknecht*). To gather these persons into one organization was a task indeed, for each, as a unionist remarked, was so interested in passing on to those beneath him the poke in the ribs which he received at the hands of the all-highest in the *Herrenhaus* that he overlooked the desirability of uniting forces in order to reciprocate in kind.[15] Farm laborers were unschooled and averse to change. Moreover, their dispersion made meetings, agitation, and the swift transmission of instructions through a job steward, so easily managed in a factory, difficult to arrange. The introduction of farm ma-

[15] H. Holtzhauer, "Die Lage der deutschen Landarbeiter," *Gewerkschafts Archiv*, V, No. 5 (1928), 248.

chinery by reducing steady employment hampered permanent organization. It was not uncommon for a farm hand to have let his union membership lapse a dozen times. Above all, the hostility of the farm-owner to the union proved the chief obstacle in the way of the organizers.

Legally, of course, the path was beset with pitfalls. The farm servants' regulations (*Gesindeordnungen*), despite the fact that there were, just before the war, forty-four separate versions on the books, had long been in large part a dead letter. Nevertheless they could still be used to plague the unionist. In addition, the Prussian Industrial Code of 1845, which forbade agreements between laborers to stop work, had been extended in 1854 to agriculture and remained in force in that field until 1918, although in industry the right to organize and to strike was recognized in 1869. Apart from this, the general law on associations was such as to make hazardous the formation of interlocal labor groups, whatever their purpose. Consequently, despite the Eisenach resolution of 1873, it was not until after the liberalization of this law in 1908 that the unionists really grappled with the farm labor problem.

In February, 1909, the Verband der Land-, Wald-, Weinbergsarbeiter- und arbeiterinnen Deutschlands was established with the financial support of the General Commission of the Social Democratic Trade Unions. In 1913 the name was changed to Deutscher Landarbeiter Verband. At the outbreak of the World War this union had about 550 local bodies and a total membership of 22,531.[16] Somewhat less than half of the members were in Eastern Germany, a third in the central region, and the remainder in the south and west. This union was followed in December, 1912, by the Zentralverband der Land-, Forst-, und Weinbergsarbeiter Deutschlands, an organization based upon Christian and patriotic principles.[17] In general it appealed to the same classes of workers as the socialist organization. It is of special interest in

[16] Deutscher Landarbeiterverband (D.L.V.), *Die Entwicklung des D.L.V.: Referentenmaterial* (Berlin, 1929), p. 8.

[17] From 1920 to 1928 known as Zentralverband der Landarbeiter, thereafter, until 1933, as Reichsverband Ländlicher Arbeitnehmer.

that after 1918 it was the one Christian union to attain wide influence in a non-Catholic region. In accordance with its repudiation of Marxism, it claimed to be representative of a *Stand* and not of a class, and lamented that, under modern conditions in agriculture, it was forced to emphasize unduly the material aspects of rural life. As a matter of fact, during the early years its practical policies were almost the same as those of the socialist union. Shortly before the war it had 3,576 members, most of them vinedressers in the Rhine region and workers in the state forests of Bavaria and the Harz.[18]

The effect of the war upon both these organizations was at first severe. Soon, however, women laborers, wives of men in the army, joined in considerable numbers, since the unions were of assistance in all dealings with the authorities. Gradually some employers were brought to deal with them, especially after the passage of the Auxiliary Service Act in December, 1916, which conceded workers' organizations a representative standing.

In 1918 the socialist farm workers' union had only 18,000 members; at the end of 1919 it had at least 620,000. During the same time the membership of the Christian union rose from 7,000 to 56,000. This inundation was, of course, due to the new prestige of labor organizations within the framework of the state. Although demands were, at first, little in accord with realities, it was fortunate that the unions should have offered a means of guiding the turbulence of the discontented masses into channels less harmful to agricultural production than those offered by the Spartacists and other extremist groups. For a time unauthorized strikes were frequent. Order was at length secured after the law regarding farm workers had been liberalized and collective bargaining had been accepted in principle by the employers, and confirmed in the provisional agricultural regulations of January 24, 1919, as well as by the creation of the community-of-interest organization (*Arbeitsgemeinschaft*) of employers and unions on February 20, 1920.

It was at this time that there grew up a marked divergence in

[18] Karl Ebermann, *Die landwirtschaftliche Arbeiterbewegung* (Giessen, 1929), p. 105.

the hitherto similar policies of the two agricultural unions, the Social Democratic and the Christian. During the war they had often worked together; in 1918 they published a common program. But the inflation created a strong opposition of interests between city and country. In this situation the socialist body developed the view, to which it consistently adhered, that the interests of rural and urban workers can be reconciled and that this is one of the important functions of the union. The Christian organization, however, preferred to emphasize the common interests of employer and farm hand, as against those of urban dwellers.

The early enthusiasm over unionism among agricultural workers was swift to evaporate. As between 1922 and 1926 the membership of the organized labor movement dropped from nearly nine to four and one-half millions, so from midyear 1920 to the end of 1923 there was a decrease from 773,112 to 101,503 in the membership of the socialist farm workers' union, and from 104,736 in 1921 to 77,368 in that of its rival. Thereafter both bodies made recovery; in 1929 the one had 167,444 and the other 80,686 members.[19] During this entire period, however, the network of collective agreements was maintained more because of legal sanction and the active support of the Ministry of Labor, through the conciliation officers and otherwise, than because of the strength of the unions.

After 1929, as a result of economic distress and the growing influence of the political parties of the right, the membership of the farm workers' unions fell away, so that the Social Democratic organization is reported as having, in June, 1933, only 27,000 members.[20] It has been found necessary by the Nazi government, however, to retain not only the semblance of a farm labor organization which claimed, in December, 1933, 627,084 members, but also, in certain areas, the structure of the collective agreements. This, however, is embodied, not in an agreement arrived at by col-

[19] Bergmann-Schleiter-Wickel, *Handbuch der Arbeit*, III, 164, 222; Allgemeiner Deutscher Gewerkschaftsbund (A.D.G.B.), *Jahrbuch* (1930), pp. 364–65; Gesamtverband der christlichen Gewerkschaften, *Jahrbuch* (1930), p. 131.

[20] *Wirtschaft und Statistik*, XIV, No. 4 (1934), 98–99.

lective bargaining (*Tarifvertrag*), but in a regulation (*Tariford-nung*) issued by the state-appointed trustee for labor (*Treuhänder der Arbeit*).[21] Measures have also been taken by the National Socialist government to combat the flight from the land, which assumed proportions of increasing magnitude after their accession to power.[22]

Besides the Christian and Socialist organizations there existed, during the post-war period, on the one hand the unions devoted to the ideal of industrial peace (*wirtschaftsfriedliche Verbände*)—called by their critics the "yellow unions"—and, on the other, the communist bodies. The former were of more significance in agriculture than in industry; they were most influential in Pomerania, where they were at times in alliance with the Christian unions. They were highly decentralized and had little influence on wages and working conditions. The communist organizations were of sporadic occurrence; their obstructive tactics were less troublesome to the Social Democrats in agriculture than elsewhere.

As a result of the development of farm workers' unions and of the new legal relationship between employer and farm hand which the Revolution introduced, there was, after the war, a considerable growth of employers' associations in agriculture. In January, 1919, the first farm employers' association organized with a view

[21] Examples of such documents may be seen in the *Reichsarbeitsblatt*, e.g., VI, No. 10 (1935), 193, 195–96, "Tarifordnung für die landwirtschaftliche Betriebe im Treuhänderbezirk Schlesien," which regulated wages, hours of labor, overtime, female labor, provision of dwellings, annual vacations, piecework rates, time and method of wage payment, both in cash and in kind, and dismissal; *ibid.*, No. 24, p. 625, giving a *Tarifordnung* relating to payment of additional wages for workers in the wheat harvest in Silesia; *ibid.*, pp. 645–46, containing general regulations for the *Regierungsbezirk Lüneberg; ibid.*, p. 624, *Tarifordnung* for workers in the 1935 potato harvest in Pomerania; *ibid.*, pp. 624–25, *Tarifordnung* for the 1935 beet harvest in Pomerania.

[22] These include restrictions on entry of farm hands into certain urban areas and certain industries, dismissal of former farm workers from urban employments, assistance to farmers to enable them to hire laborers and to erect dwellings, abolition of unemployment insurance for farm workers, etc. Cf. "Gesetz zur Befriedigung des Bedarfs der Landwirtschaft an Arbeitskräften vom 26 Feb. 1935 "(*Reichsgesetzblatt*, I, 310), and the *Anordnung* thereto of March 29, 1935 (*Reichsarbeitsblatt*, I, No. 11 [1935], 121); also Dr. Wolfgang Schreiber, "Die Sicherstellung des Arbeitseinsatzes in der Landwirtschaft," *Monatshefte für N. S. Sozialpolitik*, Vol. II, No. 10 (July, 1935).

to entering into collective agreements came into existence in Saxony and Anhalt. Others sprang up rapidly. The local associations grouped themselves into provincial federations which in turn united in a national body.[23] In general these associations were less centralized than the unions; to the provincial or state associations was left most of the responsibility of negotiating collective agreements. They represented their members in labor difficulties of a legal character and in cases before the conciliation authorities. In 1919 and 1920 they were parties to the community-of-interest associations which, for a short time, were utilized as a means of facilitating orderly relationships between employers and employees.

THE NATURE AND ACTIVITIES OF THE UNIONS

The structure of the Social Democratic union was based upon certain assumptions as to the position of the farm worker in the economic system and his attitude thereto. While the revisionists held that the farm hand ought to be assisted to become a peasant-proprietor, it was the view of those who founded the union that the labor problem on the farm is similar to that in the factory and can be solved only by means essentially similar.[24] Economically and politically the farm hand must be freed from patriarchal relationships. The handicap of a wage paid largely in kind must be removed, likewise the dependence upon the employer for housing. It was the position of the socialist union that these ends can be achieved without revolution, through education, collective bargaining, and resort to the political power of the working class.[25]

[23] Reichsverband der deutschen land- und forstwirtschaftlichen Arbeitgebervereinigungen, established September 11, 1919, in Magdeburg.

[24] See the series of articles on farm labor organization by Arthur Schulz in *Sozialistische Monatshefte* (1908–14), esp. "Die landwirtschaftlichen Arbeiter" (No. 25 [1908], pp. 1578–94) and "Die Sozialdemokratie und die ostdeutschen Landarbeiter" (No. 2 [1912], pp. 91–97). For criticism of his views see A. Hofer, "Die landwirtschaftlichen Arbeiter und die Aufgaben der Landarbeitergewerkschaft," *Die neue Zeit*, XXVII, No. 25 (1909), 900–909.

[25] At the 1920 convention of the D.L.V. its president maintained that the time was not ripe in Germany for the socialization of agriculture (*Niederschrift der 2 Generalversammlung des D.L.V. zu Berlin, 16–21 Februar 1920*, p. 153; cf. Ebermann, *op. cit.*, p. 98; also F. Hering, *Die Landarbeiter und ihre Gewerkschaften* [Berlin, 1929], p. 40).

The primary task of the union was, of course, to organize for the purpose of collective bargaining. This required undivided counsels and expert leadership; hence the centralized character of the agricultural workers' union. While all the Social-Democratic unions were highly unified, there was probably no other in which, despite democratic forms, the influence of the membership was less and that of the officials greater. The latter were often not farm workers, but handicraftsmen from rural centers, who had union experience.[26] The convention, source of all authority, met every three years and was made up, in large part, of officials. The central executive appointed local officers, and could discharge them; it had power of confirmation over the local committeemen from whom the delegates to the convention were elected. Thus the path of an opposition movement among the membership was made hard. The convention was more significant as a means of ascertaining the views of the membership than as a means of popular control. Two committees of the members advised the executive on procedure and finances. There were, in 1929, fourteen major districts (*Gaue*), each with a leader in charge; 152 local districts (*Kreise*), each presided over by a chairman responsible to the district leader; and 5,629 local unions (*Zahlstellen*). An effort was made to include in each major district territory with a common agricultural and social background; the districts, therefore, varied greatly in size. Local unions were little more than centers for the collection of dues, 70 per cent of which went to the Berlin headquarters.

The dues of the farm workers' unions were, of necessity, low. The expenses of administration, on the other hand, because of the widely scattered membership and the scarcity of voluntary, unsalaried assistance, were higher than in the case of any other Social Democratic union. In 1927 they amounted to 62.7 per cent of total expenditures.[27] No other union of this group, however,

[26] George Schmidt and Franz Behrens, presidents, since their founding, of the Social Democratic and Christian farm workers' unions, respectively, were gardeners who had been heads of unions in that occupation. Behrens had also been secretary of the Christian miners' union (*Zehn Jahre christlich-nationale Landarbeiterbewegung* [Berlin, 1923], p. 4).

[27] A.D.G.B., *Jahrbuch* (1927), p. 254.

tried to do so much on so narrow a basis. While benefits were kept to a minimum, being paid only in case of illness or death, expenditures for propaganda were maintained at the highest possible level. Agitation among a rural population is costly, since, although meetings are small, speakers must be carefully trained. Moreover, the five- to tenscore meetings held yearly in each province must be supplemented by house-to-house visits by spokesmen expert in local lore. So great were the variations in local practice, language, and ways of thought that the union found it necessary to publish, in addition to the regular bi-weekly organ, *Der Landarbeiter*, with 150,000 copies per issue, some thirteen district periodicals, to the number of 100,000 copies per issue, each carefully adapted to the practice and idiom of a given area. Besides these, the union issued also a special paper for dairymen, one for Polish workers, one for female farm workers, and one devoted to legal topics. For the guidance of its officials it published an excellent research periodical, *Landarbeiter Archiv*. There was also a press service.

In view of the unwillingness of farmers to recognize the changes wrought by the Revolution in the legal standing of farm hands, legal action was also an important phase of the work. The union gave its members free legal advice, appeared for them in court, and paid the costs in all cases arising out of the labor contract. During the two years 1927–28 it took part in 17,397 legal actions affecting 53,414 workers, and secured judgments favorable to its members in 15,162 cases.[28]

Outlays for strikes were small. After the Revolution, when farm strikes were no longer unlawful, there were frequent disturbances, most of which, being of a political character, were not authorized by the union.[29] Some of the more extensive were, however, carried on under union direction. The most noteworthy of these was the Silesian farm strike in 1923, when more than 100,000 laborers laid down their work for a period of four weeks. Up to this time, however, it may be said without exaggeration that the

[28] D.L.V., *Bericht* (1926–28), pp. 43–47.

[29] Enquête-Ausschuss, II Unterausschuss, No. 7: *Untersuchungen über Landarbeitsverhältnisse* (Berlin, 1929), pp. 157–59, 207.

Unions, Christian and Social Democratic alike, were more concerned to prevent strikes than to incite them. For the attainment of their ends the unions preferred to rely upon negotiation, with ultimate resort to the state arbitration boards; indeed, in view of their financial weakness, the small proportion of the agricultural workers organized (7–8 per cent in the case of the socialist union and 3–5 per cent in the case of the Christian body), and the friction between the two unions, any other policy would have been suicidal.

Most of what has been said about the structure of the Social Democratic agricultural workers' union applies also to the Christian organization. Its tactics followed the same lines, save that, as a representative of rural tradition, it devoted itself especially to the encouragement of decorous conviviality, and of local festivals, often under the patronage of the clergy or the local landed proprietor. Both unions endeavored to represent the interests of farm workers in all questions of social policy. The national presidents of both were members of the Reichstag, and worked in close touch with their respective central federations. Both bodies were represented in the state and provincial legislatures, the national Economic Council, the conciliation boards, and other insurance and labor authorities.

THE COLLECTIVE AGREEMENTS IN GERMAN AGRICULTURE

The first collective agreements in German agriculture appeared before the war in the South and West under the auspices of the Christian union; in 1914 they affected only 500 employees.[30] After the Revolution the idea spread rapidly; in 1919 the socialist union became a party to 318 agreements. During the inflation period and that of the agricultural crisis which followed it, collective bargaining suffered a severe setback, but thereafter gained ground, especially in Eastern Germany, where in 1928 some 40 per cent of the persons affected by collective agreements in agriculture were employed. On the first of January, 1929, there were in existence in Germany 261 agreements affecting 1,468,607 employees in

[30] Max Hofer, *Die Lohn und Tarifpolitik des Zentralverbandes der Landarbeiter* (Berlin, 1926), p. 7.

agriculture, gardening, and animal husbandry, and 247,088 establishments. One hundred and sixteen of these agreements concerned farm hands alone—in number, 1,399,005, of whom 514,168 were women.[31]

The process by which these agreements came into being was strongly influenced by political considerations. Prior to 1925, for example, when there was widespread fear of labor unrest, settlements were reached through negotiation between the parties themselves. After 1925, however, negotiations frequently failed, and agreements were reached only through appeal to the governmental arbitration authorities, with resort to compulsory decisions, which were frequently declared binding upon all parties, organized and unorganized alike. This policy of the Ministry of Labor met with the disapproval of the employers.[32] Nevertheless, although collective agreements disappeared after the assumption of power by the Nazis in 1933, since there were no longer any parties authorized to negotiate them, it was found necessary to maintain on the farms, by edict of the Labor Trustees, a considerable portion of the regulatory structure erected by the unions.

The agricultural agreements were of two classes: the *Rahmentarife*, or "frame agreements," covering matters capable of being regulated in fairly uniform fashion over wide areas, and the *Kreistarife*, dealing with purely local affairs, especially wages. For a time after 1918 practically all agreements were local in character, but gradually they were grouped by districts. In different parts of Germany the respective importance of the two types varied greatly.[33] Of the agreements in effect at the end of 1928, thirty-six were for a *Land* or a *Provinz*, forty-one for districts of lesser size, and sixty-six for local units (*Kreise*).[34]

[31] "Die Tarifverträge im Deutschen Reich," *Reichsarbeitsblatt* (Sonderheft 55), p. 2.

[32] *Fragen ländlicher Sozialpolitik, Arbeitsmarktpolitik, Lohn- und Tarifpolitik: Reichsverband der deutschen land- und forstwirtschaftlichen Arbeitgebervereinigungen* (Berlin, 1926), pp. 19–21. For the union attitude see G. Schmidt, "Der Kollektive Arbeitsvertrag in der Landwirtschaft" (*Landarbeiter Archiv*, Vol. II [1928], No. 6; *Bericht 1926–1928 des D.L.V.*, pp. 25, 61).

[33] Wilhelm Helmerking, *Untersuchungen über die vergleichsweise Höhe der Landarbeiterlöhne in Deutschland vor und nach dem Kriege* (Berlin, 1931), pp. 27–28, 32.

[34] *Bericht 1926–1928, des D.L.V.*, p. 26.

As regards the range of matters affected by the agreements there was also much diversity. In this regard they may be classified as "complete agreements" (*Volltarife*), which governed the employment situation in its entirety in so far as it was regulated by collective agreements at all, as "covering agreements" (*Manteltarife*), which regulated only those matters which could be standardized over a considerable area, and as agreements affecting wages alone (*Lohntarife*). It was a peculiarity of collective bargaining in agriculture and forestry that a proportionately large number of employees was affected by agreements of the first type. At the end of 1929, for example, there were 156 *Volltarife* affecting 1,122,984 employees, out of a total of 1,951,711 farm and forestry employees working under agreements collectively arrived at. There were also at this time fifteen *Manteltarife*, affecting 721,578 employees, and forty-five *Lohntarife* fitting into and supplementing them. By contrast, among the highly organized metal workers, while there were 147 *Volltarife*, only 245,065 persons were affected thereby. In agriculture it was less difficult than in the more specialized industries to work out a single agreement covering terms of employment over a wide area. The *Volltarife* for Silesia, for example, covered 270,000 employees and 2,314 concerns, and that for East Prussia 219,000 employees in 35,516 establishments. Some *Manteltarife* also had a wide range, such as that for Bavaria, affecting 275,000, and that for Saxony-Anhalt, affecting 225,000 workers.[35] These were among the most extensive collective agreements in Germany, only the building industry, railroads, and coal-mining having documents of wider scope. On the other hand, many "complete" agreements covered only limited districts and a few applied to only individual firms. At first agreements had reference only to wages and hours, but gradually they included other particulars such as the adjustment of disputes.

In the network of collective agreements, the contracting parties were, on the employer's side, the single associations in the states,

[35] W. Woytinsky, "Die Tarifverträge in Deutschland Ende 1929," Sonderheft 1 der *Gewerkschaftszeitung*, pp. 19–20.

provinces, and other districts, and, on the labor side, the socialist and Christian farm workers' unions. The unions thus acquired a wide influence, although in 1929 only 2.5 per cent of the 1,399,005 agricultural laborers affected by the agreements, as reported, were members of the reporting unions. On the first of January, 1929, of the agreements covering agricultural workers, 89, affecting 1,396,933 employees and 189,332 concerns, were concluded between organized bodies on both sides, while 27, affecting 2,072 employees and 117 concerns, were concluded between single firms on the employer's side and unions on the side of the employees.[36] Most of the agreements were valid for a period of six months to a year, but a considerable number ran for an unspecified period.

The wage policy of the unions centered around the attempt to lessen the divergence between farm wages and those paid in industry,[37] not merely to benefit the farm hands, but also to lessen the threat to urban standards resulting from the constant drift to the cities. This, indeed, was the original object of the founding of the socialist farm workers' organization. The unions objected to the system whereby the farm hand received, not an individual, but a family wage, and to arrangements whereby the laborer's wife and children, and even additional unmarried laborers, were included in his labor contract (*Hofgänger-system*).[38] It was held that under this plan the laborer became a sort of unpaid overseer whom it was difficult to include in a farm laborers' union, and that the mobility of the farm hand was greatly impaired. Labor-

[36] "Die Tarifverträge im Deutschen Reich," *Reichsarbeitsblatt* (Sonderheft 55), pp. 8–9.

[37] "Industriearbeiterlöhne für Landarbeiter," *Schriften des Deutschen Landarbeiterverbandes*, No. 23 (Berlin, 1929); see also *Aus der Tätigkeit des Reichsverbandes im Jahre 1927: Reichsverband der deutschen land- und forstwirtschaftlichen Arbeitgebervereinigungen* (Berlin, 1928), pp. 90–91.

[38] F. Aereboe (*Agrarpolitik*, pp. 161–62) describes the overcrowding to which the system gives rise. W. Bernier ("Die Lebenshaltung, Lohn- und Arbeitsverhältnisse von 145 deutschen Landarbeiterfamilien," *Schriften des D.L.V.*, No. 32, p. 68) terms the compulsion to become *Hofgänger* a great injustice to the children on the farms. See also A. Skalweit, *Agrarpolitik* (Berlin, 1924), p. 281; J. Hansen, *Die Landwirtschaft in Ostpreussen* (Berlin, 1916), p. 60.

ers' children were often forced to remain on an estate, since departure involved dismissal and eviction for their parents.[39]

A frequent cause of farm labor disputes was the question as to the extent to which wages should be paid in money. Cash ordinarily made up a small proportion of the whole wage; a dwelling, a piece of land, pasture and feed for cattle, and supplies, both finished and unfinished, for consumption and for sale, were often included.[40] During the post-war inflation payment in kind became more frequent in those areas in which it was already common, and was even introduced in districts where up to that time it had been unknown.[41] This system (*Naturallohn, Deputat-system*) was strongly opposed by the socialist union. It was argued that by it the worker was chained to the farm. He could not bargain for higher wages when his services were most in demand, since to do so would endanger his home and his crop or cause his employer to withdraw the right to pasture. Moreover, it was asserted that the valuation placed upon supplies allotted to the worker was quite arbitrary,[42] and that the system of furnishing commodities to be finished for market forced the laborer to spend his free time making butter or grinding meal and to face the danger of loss if unable, for such a disadvantageously small amount of produce, speedily to find a market. Similar objection was made to the furnishing of a piece of land, on which to raise potatoes, for consumption or sale, since this involved the laborer's finding time to work on his own land when his services were most in demand by his

[39] Holtzhauer (*op. cit.*, p. 256), cites several examples, among them that of a boy, apprenticed to a painter in Rostock, who, because of his refusal to work upon the estate, was not permitted by its owner to enter the home of his parents, located thereon. The employers' association of Kreis Schlodav recommended to its members that no boy of more than fourteen years of age be permitted to remain in quarters owned by an employer if he refused to work on demand.

[40] Bernier (*op. cit.*, p. 57), gives the following for 1930–31: Pomerania, 16 per cent of total wage in money; East Prussia, 22.7 per cent; Saxony, 67.4 per cent; Thuringia, 67.4 per cent; Hanover, 70.2 per cent; Bavaria, 77.7 per cent.

[41] Enquête-Ausschuss, II Unterausschuss, No. 7 (1929), 35.

[42] Most farm collective agreements computed values of farm produce on the basis of prices prevailing on the produce exchanges. Collective bargaining tended to eliminate friction through establishing standards for the valuation of the various forms of payment in kind.

employer. These views were not shared by the Christian union; on the contrary, it held that the right to work a piece of land is one to be sought after, and that when products are raised on a farm it would be folly for the workers to have to resort to middlemen to secure them. It was necessary, of course, to guard against unfairness under the system, but the belief of the Christian group in a harmony of interests between farmer and farm hand led to an optimistic view of this problem. Consequently, they advocated an extension of the system rather than its abolition.[43]

To the payment of piece rates neither union raised objection provided that such rates were established by agreement, rather than by arbitrary action of the employers.[44] Hours of labor, it was held, ought to be regulated through collective agreement, but no demand was made for the eight-hour day in farming. Ordinarily a total of working hours for the year was agreed upon, the maximum being established by the regulations of 1919 at 2,900.[45] Subdivision in accordance with seasons and types of work was left to the parties concerned. Overtime was permitted, when necessary, at special rates. Meal and rest periods, likewise time spent in feeding and care of workstock and equipment, were not included in the working time, although time spent in going from farm to work place usually was. There were, of course, innumerable regional peculiarities.

A constant subject of discussion during post-war years was the problem of housing.[46] In Eastern Germany most of the available dwellings were owned by the employers, who thus possessed, in view of the current shortage of houses, a potent weapon in dealing with their hands and fighting the union. So far as possible, migratory laborers, housed very cheaply in roughly constructed

[43] Zentralverband der Landarbeiter, *Verhandlungsbericht über den 3 Verbandstag* (Berlin, 1926), pp. 69–70.

[44] L. W. Ries, *Leistung und Lohn in der Landarbeit* (2d ed.; Berlin, 1926); Curt Lomberg, "Das Lohnproblem in der Landwirtschaft," *Landarbeiter Archiv*, IV, No. 2 (1930), 71–78.

[45] *Bericht 1926–1928 des D.L.V.*, pp. 35–36.

[46] Dr. Wahrburg, "Landarbeiterwohnungsbau und Arbeitsbeschaffung," *Reichsarbeitsblatt*, No. 32 (1926), Nichtamtl. Teil.; Enquête-Ausschuss, II Unterausschuss, No. 7 (1929), 21–25, 132–35, 490–521.

barracks, were preferred to permanent laborers with families. To correct this situation the German government assisted in various ways the building of farm dwellings. In this it received the support of both socialist and Christian unions. The former, however, demanded the abolition of the employer-owned farm dwelling and indorsed the co-operative settlement movement.[47]

POINTS OF COMPARISON WITH THE SITUATION IN THE UNITED STATES

The conditions which gave rise to agricultural trade-unionism in Germany may be observed also, in some degree, in the United States. Here, too, there is a "flight from the land," an expression of that dissatisfaction with rural conditions of which labor agitation is another result. Between 1920 and 1930 it is estimated that the net migration from rural areas was 5,898,000, of which number of persons a majority were individuals between fifteen and thirty years of age.[48] The attempt to form labor organizations is, in the main, confined, as in Germany, to the areas given over to large-scale farming. During the last thirty years, while the number of farms of less than twenty acres has been increasing, as compared with the number of those of from one hundred to five hundred acres, the importance of large farms, whether defined in terms of acreage, value of production, or type of ownership or management, has also increased. Such farms—taking for example those producing commodities to the annual value of $30,000 or more—produced in 1929 only 4.5 per cent of the value of all farm products sold, were only 0.1 per cent of the total number of farms, and made up only 1.3 per cent of the acres of crop land harvested. They represented, however, 11 per cent of the total expenditures of American farms for hired labor.[49] Moreover, they were concentrated in certain areas, notably California, Arizona, Connecticut, Massa-

[47] The demands of the D.L.V. are set forth in sec. v of the Agrarprogramm of the Social Democratic Party, 1927.

[48] O. E. Baker, *Recent Social Trends in the United States* (New York, 1933), chap. ii, p. 111.

[49] "Large Scale Farming in the United States, 1929," *Fifteenth Census of the United States, Census of Agriculture* (Washington, 1933), p. 24.

chusetts, New Jersey, and Florida, and in certain types of agriculture, more particularly truck, fruit, and stock farming, cotton growing, and the production of crop and animal specialties. Twenty per cent of the value of products of all truck farms in the United States was attributable in 1929 to large-scale truck farms, while in California the figure was 53 per cent, in Arizona 47.9 per cent, in Florida 13.8 per cent, and in New Jersey 10.1 per cent. Such farms often have a semi-industrial type of organization, with numerous workmen, most of whom are employed only for the rush season, and engaged, with the aid of elaborate technical equipment, at standardized tasks. In such enterprises the farm labor problem in the United States takes its most striking form. Grievances arise similar to those complained of by the German workmen on the great estates. The introduction of foreign seasonal laborers creates in California and Colorado, as in East Prussia, a serious social problem. Moreover, it is interesting to note that, as in Germany the districts early devoted to the production of sugar beets became the seedbed of agricultural unionism, so in America the beet-growing areas of Michigan, Ohio, and the mountain states have furnished a field for labor organizers.

The cause of the intensified agitation among farm laborers during recent decades cannot be traced to any notable increase in the total number of farm laborers in the United States. The census figures on this point, although unsatisfactory, appear to indicate that, while in 1930 somewhat more labor was hired for wages on the farms than in 1910 or 1920, the total thus hired was probably not greater in 1930 than in 1900. The average cash expenditure for labor per farm hiring was, however, greater in 1930 than in any preceding census year. It is nevertheless characteristic of certain areas, though not of the United States as a whole, that the composition of the agricultural population has during recent years undergone a notable change. In California, for example, more than one-half of the gainfully employed persons in agriculture are listed as laborers. In such areas of specialized and intensive farming, hands are gathered in considerable numbers under conditions more like those of a factory than is ordinarily the case in agricul-

ture. With them the sense of identity with the farm undertaking is weakened while awareness of interests in common with others of like status is increased.

In certain respects, of course, the situation in the United States is sharply distinguished from that of Germany. Until recently, for example, the *carrière ouverte aux talents*, more commonly referred to in agricultural circles as freedom of movement on the agricultural ladder, was characteristic of America; a farm laborer might look forward to becoming a tenant and, ultimately, a farm-owner. In Germany such change in status was exceptional. There is a difference, again, as regards share tenancy. In Germany, share tenants have long since ceased to be typical of the labor on the great estates, while in this country the plantations of the Cotton Belt are manned to a large extent by share-croppers. In neither case have the share laborers shown any interest in organization; only when displaced in large numbers, as in the United States since 1930, have they assumed, temporarily, a place in the American farm labor movement.

In the conditions of its origin the American movement differs from the German in that, while the latter was sedulously fostered by the General Federation of Trade Unions, the American Federation of Labor has given little support to the farm workers' unions, most of which find it difficult to raise funds to secure an American Federation of Labor charter and to remit the necessary monthly contribution per member to the Federation treasury. Lack of any assistance from governmental authorities also serves to distinguish the farm labor situation in the United States from that of Germany or England.[50]

The conclusion to which one is drawn as a result of study of the German experience is that collective bargaining seems of little advantage to laborers who are employed on scattered holdings of small or moderate size, upon which, as in the major crop regions of the United States, family or local exchange-labor is predomi-

[50] It is interesting to note the rapid spread of a rudimentary type of labor organization among sugar-beet workers in the mountain-states area during 1934 and 1935, in response to the situation created by the existence of the sugar-beet production adjustment contracts of the A.A.A., which gave the secretary of agriculture the right to fix minimum wages.

nant. On the other hand, in areas characterized by large-scale holdings, with numerous farm employees or devoted to intensive types of agriculture requiring much hand labor, there are bound to be persistent attempts to emulate the industrial worker. Even here, however, the difficulties are prodigious. Without the long-continued and generous support of the industrial labor movement, as in Germany, or the assistance of such governmental bodies as the conciliation authorities in Germany and the Agricultural Wages Board in England, it appears that the organization of farm laborers must be sporadic. As a means of avoiding labor unrest and stabilizing employment relations such governmental assistance may well be advisable. It will be recognized, however, that the limitations placed by agricultural production upon collective bargaining, even under large-scale operation, are often such as to make it of doubtful benefit to the workers. Schematic standardization of working conditions, essential to widespread collective agreements, are of less advantage in agriculture than in most branches of industry. Unions always insist that the rates set in the agreements are to be regarded as minima, but employers, as generally, look upon them as maxima, with the result that although wage reductions are hindered, increases also are checked, to the detriment of the more able laborer and with serious effect upon his efficiency. The disfavor into which the method of payment by piece rates is likely to fall also works to the same end.

In the United States, the formation of labor unions by agricultural workers is, as Carlton Parker said of the I.W.W., of significance chiefly as a symptom of some economic maladjustment. The experience of Germany and England indicates, however, that such bodies may also serve, under proper governmental regulation, as a means of securing support and understanding for the action of public bodies intrusted with the task of improving labor conditions upon the farms. Thus employed, their influence may extend far beyond their own membership and their significance as a piece of social mechanism may be greatly increased.

NOTE ON THE PROGRESS OF IRON PRODUCTION IN ENGLAND, 1540–1640

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IT IS rather generally believed that the first period of rapid growth in the output of iron in England began in the last quarter of the eighteenth century. While there can be no question of an earlier progress comparable with the revolutionary expansion after 1775,[1] there are, as I suggested in my book on the coal industry, reasons for thinking that the late sixteenth and early seventeenth centuries were also a time of striking increase in production.[2] The opinion I then expressed can now be put forward in a more precise form, with the support of better evidence.

Before the Reformation the process of iron-making by which calcined ore is converted at a furnace into molten iron, to be subsequently reduced at a forge into bars, was very little practiced in England. Wrought iron was generally made directly from the ore in small quantities at the so-called bloomery forges, and the larger portion of the ore was wasted because of the failure to melt it into a liquid form. There is no evidence of genuine blast furnaces at the beginning of the sixteenth century except in southeastern England, and there we know for certain of only three. A period of great expansion in the Wealden iron industry, especially that of Sussex, began in the forties, when iron cannons were first cast in England. By 1548 the number of blast furnaces in Sussex probably exceeded a score. Twenty-six years later there were about fifty in the three counties of Sussex, Surrey, and Kent, and at the end of Elizabeth's reign an even larger number.[3] On the eve of the Civil War, when iron production in the Weald had declined somewhat

[1] Cf. T. S. Ashton, *Iron and Steel in the Industrial Revolution* (London, 1924), p. 60.

[2] J. U. Nef, *The Rise of the British Coal Industry* (London, 1932), I, 167–69.

[3] Ernest Straker, *Wealden Iron* (London, 1931), pp. 47, 49, 119, 53, 58, 60. The figures in the text are based on early records and estimates, which put the number of "iron mills and furnaces" in Sussex in 1548 at 53, the number of "furnaces and iron mills" in Sussex, Surrey, and Kent in 1574 at more than 100, and the number of "hammers and furnaces" in Sussex shortly before 1607 at 140. Apparently nearly half the ironworks in southeastern England were furnaces (*ibid.*, pp. 58, 61, 63).

from a peak reached at the beginning of the seventeenth century, there were still at least thirty-five and possibly nearly fifty furnaces in blast.[4]

By this time the new method of making iron had spread to many other counties. The ancient mining area of the Forest of Dean, which had no blast furnaces before 1612, had ten blowing in 1639.[5] For other districts, no such comprehensive surveys of iron works have been made. But furnaces, started for the most part during the reigns of Elizabeth and James I, were probably nearly as numerous in Derbyshire, Glamorganshire, Shropshire, Worcestershire, Staffordshire, and Yorkshire as in the Forest of Dean.[6] In addition, Monmouthshire, Nottinghamshire, Warwickshire, and Durham certainly had blast furnaces in operation before the middle of the seventeenth century,[7] as did in all probability Herefordshire, Cheshire, Merionethshire, and Somerset.[8] If we assume

[4] A sharp decline in the importance of the Wealden iron industry set in about the middle of the seventeenth century. But there were 35 furnaces and 45 forges in operation in 1653 (*ibid.*, p. 61). If, as is probable, the decline in the industry had begun by this date, the number of furnaces on the eve of the Civil War may well have exceeded 40 or even 50. It is not clear whether the figure for 1653 includes furnaces casting cannons. There were 10 of these at that time (*ibid.*, p. 166).

[5] Rhys Jenkins, "Iron-Making in the Forest of Dean," *Newcomen Society Transactions*, VI (1925–26), 62–63.

[6] There were certainly several in each of these counties before the Civil War. See *Victoria County History of Derbyshire*, II, 359–60; Chancery Proceedings (Public Record Office, London), Eliz., Z/z/12; Star Chamber Proceedings (Public Record Office), James I, 311/31 (for Derbyshire); W. Llewellin, "Sussex Ironmasters in Glamorganshire," in *Archaeologia Cambrensis*, 3d ser. IX (1863), 105–6 and *passim;* Chancery Proceedings, Series I, James I, C 22/69; *Historical Manuscripts Commission. Report of MSS of Lord de l'Isle and Dudley*, pp. 318–21 (for Glamorgan); *ibid.*, pp. 29, 301; *V.C.H. Shropshire*, I, 460; Star Chamber Proceedings, James I, 202/3 (for Shropshire); *V.C.H. Worcestershire*, II, 268; Dud Dudley, *Mettallum Martis*, 1665, pp. 5, 12 (for Worcestershire); *ibid.*, pp. 9, 15–16, 47–48; Lansdowne MSS (British Museum), vol. LVI, no. 36; Chancery Proceedings, Series I, James I, A 10/11 (for Staffordshire). In 1720 there were 6 furnaces and 9 forges working in Yorkshire according to a contemporary document (Ashton, *op. cit.*, pp. 235–37). The output of iron in Yorkshire was then on the decline (*V.C.H. Yorkshire*, II, 395), and it seems probable that there were at least as many furnaces in the county on the eve of the Civil War as in 1720. For iron works at Sheffield in the reign of James I, see Chancery Proceedings, Series I, James I, E 4/79. I am indebted to Mr. F. J. Fisher, of the London School of Economics, for help in obtaining copies of some of the manuscripts I have used in preparing this article.

[7] Exchequer Special Commission (Public Record Office), no. 1518; *H.M.C. Report on MSS of Lord Middleton*, pp. 494–95; *Calendar of State Papers Domestic*, 1635–36, p. 435; *V.C.H. Durham*, II, 280.

[8] Ashton, *op. cit.*, pp. 236–37; Chancery Proceedings, Series I, James I, D 6/24; E 3/31.

that there were in England and Wales over 100 furnaces in blast on the eve of the Civil War, we shall probably be well within the mark. Forges reducing pig to bar iron were nearly twice as numerous.[9]

These figures offer a basis for reaching a rough and tentative estimate of the output of iron, if we know approximately the production at the furnace and the forge. According to Dud Dudley, the Staffordshire ironmaster who wrote just after the Restoration, blast furnaces produced from 600 to 800 tons of pig iron per annum on the average, and forges from 150 to 300 tons of bar iron.[10] While there were ironmasters in the Forest of Dean in Dudley's time who believed that their furnaces

[9] An estimate made in 1636—in connection with the prosecution of Richard Foley, the Midland ironmaster, who was charged with wasting wood at his ironworks—put the number of furnaces and forges in England at "about 300," in addition to those belonging to Foley (*Calendar of State Papers Domestic*, 1635–36, p. 400). He owned 19 (*ibid.*, p. 435). It is commonly supposed that there were only 59 furnaces and 100 forges in England and Wales early in the eighteenth century. But, as Mr. Ashton has shown, the list of 1720 (not 1740, as H. Scrivenor has it in his *History of the Iron Trade* [1841], p. 57) omits many large furnaces and forges (Ashton, *op. cit.*, p. 235). Another contemporary estimate of 80 furnaces and 180 forges is probably nearer the mark (*The Case of . . . . the Landed Interest in Great Britain, with Respect to the . . . . Proprietors of Iron Works*, 1736). Moreover, there were almost certainly fewer furnaces in the early eighteenth century than on the eve of the Civil War. The number in operation in Sussex, Kent, and Surrey fell from 35 in 1653 to 15 in 1717 (Straker, *op. cit.*, pp. 61, 63), and while the Wealden iron industry had undoubtedly shrunk more than that of other areas, there was also a decline in production in Derbyshire and Yorkshire (*V.C.H. Derbyshire*, II, 321; *V.C.H. Yorkshire*, II, 395), and doubtless elsewhere.

While there were probably more than 100 furnaces in blast on the eve of the Civil War, the figure 300 given by Dud Dudley in his *Mettallum Martis*, published in 1665, is certainly an exaggeration. To begin with, Dudley was simply using an estimate in Simon Sturtevant's *Metallica*, published in 1612 (*Mettallum Martis*, p. 48), an estimate also to be found in a manuscript written in 1611 (*Harleian MSS* [British Museum], 7009, f. 10). Now, this estimate does not mention 300 "furnaces," but simply 800 "iron mills." It was Dudley who "supposed" that 300 of the mills were furnaces and 500 forges. While that is a reasonable allocation between the two categories, it is quite possible that some of the "mills" were neither blast furnaces nor forges for converting pig into bar iron, but primitive "bloomery" forges making iron directly from the ore (see below, p. 403). The estimate which Dudley used is in any case a guess, and it applies, not to the reign of Charles II, but to that of James I, when there were a good many more furnaces and forges in southeastern England.

[10] Dudley, *op. cit.*, pp. 49–50. He was doubtless speaking of the Midlands, where the furnaces produced a good deal more iron than in southeastern England.

could make an even larger quantity—800 to 1,200 tons[11]—few if any furnaces actually produced as much as Dudley said year in and year out. The average output per furnace in England and Wales about the middle of the seventeenth century was certainly well under 300 tons.[12] But it was considerably greater than in the early years of Elizabeth's reign, when the ordinary furnace apparently produced 100 tons or even less.[13] As for the average forge, the output around 1640 was certainly under 150 tons, possibly not more than 100 tons.[14]

Inadequate though these data are, they perhaps make it possible to fix minimum and maximum figures for the output of pig and bar iron in England and Wales on the eve of the Civil War. If we assume that under normal conditions there were not less than 100 nor more than 150 furnaces in blast, and that the average output per furnace was between 200 and 250 tons, the annual output of pig iron would have been not less than 20,000 nor more than 43,000 tons. Again, if we assume that there were not less than 150 nor more than 250 forges in operation and that the average output per forge was between 100 and 130 tons, the annual output of bar iron would have been not less than 15,000 nor more than 33,000 tons.

These figures suggest that the national output was somewhat greater than in the early eighteenth century, when a reasonable estimate was

[11] H. G. Nicholls, *Iron Making in the Forest of Dean* (London, 1866), pp. 43–45; Rhys Jenkins, "Iron-Making in the Forest of Dean," *Newcomen Society Transactions*, VI (1925–26), 59.

[12] In 1615 one ironmaster, Sir Basil Brooke, agreed to purchase annually for his furnace in the Forest of Dean enough wood to produce 320 tons of iron in a year (Jenkins, *op. cit.*, p. 49). A furnace in Derbyshire actually produced 358 tons in 6 months in 1662–63 (*V.C.H. Derbyshire*, II, 360). But the furnaces in the Weald produced much smaller amounts—in 1720 the average output per furnace in Sussex, Surrey, and Kent was only a shade more than 100 tons. At that time the average output for the country as a whole—judging by the production of 59 furnaces in England and Wales—was 294 tons (Scrivenor, *op. cit.*, p. 57). Before the Civil War the average was in all probability a good deal less.

[13] Nef, *op. cit.*, I, 168. One furnace in Glamorgan, however, actually produced 171 tons in a year, 1567–68 (*H.M.C. Report on the MSS of Lord de l'Isle and Dudley*, p. 319).

[14] The average annual output of ten forges in Yorkshire, probably at the end of the seventeenth century (the date is uncertain), was 134 tons per forge. The average of 100 forges in 1720 was 121 tons; of 95 forges in 1721, 128 tons. But in good years at the beginning of the eighteenth century an average of 153 tons was said to be normal (*V.C.H. Yorkshire*, II, 395; Ashton, *op. cit.*, pp. 235–38). On the eve of the Civil War the average output per forge was perhaps slightly less than at the beginning of the eighteenth century.

25,000 tons of pig and 18,000 tons of bar iron.[15] It is possible that the decline had already set in before the middle of the seventeenth century, and that the annual output in the thirties was slightly under that during the decade 1611–20.

Production certainly increased greatly between the Reformation and the Civil War. The output of pig iron from blast furnaces before 1540 was unimportant; possibly it was not more than 500 tons in a year.[16] The output of wrought iron from one of the older forges, where metal was made directly from the ore, seldom exceeded 30 tons a year; the average was probably less, perhaps not more than 20 tons.[17] There is no way of estimating the number of these forges on the eve of the Reformation. We know that throughout the Middle Ages there were many of them, scattered about a number of English counties, turning out iron in small quantities for local markets. But it is doubtful whether at the outside there were ever more than 300 or 400 in operation in a single year. Under normal conditions the number was probably smaller.[18]

[15] Ashton, *op. cit.*, pp. 235–36.

[16] We know for certain of only three blast furnaces before 1540 (see above, p. 398), and it would be surprising if any of these produced as much as 100 tons of pig iron a year.

[17] Dud Dudley's statement that the old bloomery forge produced about one cwt. a day, when the bellows were driven by foot power, and about two cwt., when they were driven by water power (*op. cit.*, pp. 50–51) is supported by other evidence. The accounts for a forge in Glamorgan, operated by nine workmen, "after the manner of the . . . . Forest of Dean," show that it produced 2 cwt. a day in 1531. As iron works at that time were seldom in operation as many as 40 weeks in a year, the annual production of such a forge was probably about 20 tons. And, according to Mr. Rhys Jenkins, an engineer who has made a careful study of the early iron industry, "most probably the forges scattered about the Forest [of Dean] were worked by fewer men and produced even less" (*op. cit.*, p. 47).

Mr. G. T. Lapsley, in his introduction to an account of 1408–9 for a forge in Durham, which apparently had water-driven bellows, speaks of an output of "nearly two tons per week on the average" (G. T. Lapsley, "The Account Roll of a Fifteenth-Century Iron Master," *English Historical Review*, XIV [1899], 213). But the actual account shows that the maximum output in a single week was 10 "blooms," and that the bloom was 195 lbs., or considerably less than 2 cwt., not "nearly three cwt." as Lapsley has it. Only 278 "blooms," or just over 24 tons, were produced in the whole year (*ibid.*, pp. 215, 229, and *passim*), so that the weekly *average* was half a ton, not nearly two tons.

[18] The chief center of iron production in the twelfth and thirteenth centuries was the Forest of Dean, and there were in 1282 some 60 forges in and near the Forest (Nicholls, *op. cit.*, pp. 20–21). In the fourteenth century the main center of

In comparing the output of iron in the thirties of the sixteenth century with that a hundred years later, it is necessary to remember that not all these primitive forges disappeared with the general adoption of the blast furnace. There were still some of them even as late as the early eighteenth century. Again we must remember that some articles such as cannons and the backs of fireplaces, which were coming to be widely used for the first time in Elizabeth's reign, were cast into final form at the new blast furnaces, and that no allowance has been made for those in our estimates of production.

Taking all these considerations into account, it seems certain that the output of iron in England and Wales increased several fold, possibly as much as fivefold or even more, in the century following the Reformation. There is no reason for supposing that any great expansion had occurred during the previous two or three centuries. And it was not until after 1757, when the output of bar iron was still only 18,000 tons,[19] that the decline, which apparently set in before the middle of the seventeenth century, was definitely arrested. Between the thirteenth century and the last quarter of the eighteenth there was only one period in which the English iron industry grew rapidly. The growth began about 1540 and continued until at least the second decade of James I's reign. It was halted by the exhaustion of the forests, for the price of firewood had risen about three times as rapidly as that of commodities generally,[20] and English mechanics had not devised technical changes in the process of manufacture to permit the general substitution of coal as fuel at the furnace and the forge.

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the industry shifted to southeastern England, but there were many small forges in the later Middle Ages in Yorkshire, Shropshire, Durham, and many other counties (*V.C.H. Yorkshire*, II, 341–51, 387–90; *V.C.H. Shropshire*, I, 460; L. F. Salzman, *English Industries of the Middle Ages* [2d ed.; Oxford, 1923], 21–40).

[19] Ashton, *op. cit.*, pp. 60, 236.

[20] Nef, *op. cit.*, I, 158.

BOOK REVIEWS

Dynamic Economics: Theoretical and Statistical Studies of Demand, Production and Prices. By CHARLES FREDERICK ROOS. Bloomington, Ind.: Principia Press, Inc., 1934. Pp. xvi+275.

The book of Dr. Roos is written by a distinguished mathematician who makes use of rather novel mathematical methods and sometimes tries to enforce his arguments by extensive statistical investigations. As merely a special branch of logical reasoning, mathematics has its application in the social, as well as in the natural, sciences. Economics is essentially an empirical science, which, since it deals with mass phenomena, has to make use of statistics.

The work of Professor Evans[1] and his school,[2] of which Dr. Roos is an outstanding representative, shows that economists have much to learn from mathematicians. The fact that their work has been neglected, especially by European economists, is highly deplorable. It seems that even the pure mathematicians have paid more attention to it than the economists. But as in many cases, the fault is on both sides. If part of the trouble is sheer ignorance and sometimes even ill will on the part of the non-mathematical economists, some of the blame must also be put on the unwillingness of the mathematicians to conform, at least to some extent, with the traditions of economics and especially of older mathematical economics. This makes it very hard for the economists to appreciate the work of the distinguished American mathematicians, and to see the far-reaching importance of their methods, if not their conclusions.

One of the main reasons for this is, however, that whereas traditional economics is still mainly dealing with static problems, the work of Dr. Roos and his colleagues treats chiefly dynamic problems. They are, moreover, essentially problems involving that stepchild of economics, time, which has only fairly recently gained some attention from econo-

[1] G. C. Evans, *Mathematical Introduction to Economics* (1st ed.; New York, 1930).

[2] See especially the extensive bibliography in V. Volterra, *Theory of Functionals* (London, 1930), pp. 208 ff.

mists[3] and which still continues to puzzle them. To those few, whose number is nevertheless increasing, it may seem that Dr. Roos's approach is rather bold and peculiar, perhaps sometimes even futile. They will especially resent the singling-out of special problems and the lack of a systematic treatment and a clear methodological approach. But this would be a criticism rather of the title of Dr. Roos's book than of its content. It is especially the treatment of concrete theoretical or even empirical cases which may push economics a good deal further, and the general theory and methodology can and will be developed later.

Many different problems are treated in Dr. Roos's book. The statistical studies, dealing with the demand for gasoline, the growth and decline of industry, the factors influencing residential building, the behavior of free and restrained prices, are all novel and of greatest interest for both the economist and the statistician. We will limit our discussion, however, to the purely theoretical problems. It should be noted that Dr. Roos is one of the few competent statisticians who base their statistical analyses on theoretical economic considerations. Even if one does not agree with the particular approach of the book, this general point of view should be universally appreciated. It contrasts most favorably with the purely empirical analyses of many American statisticians who deal with economic problems.

Dr. Roos deals with demand for consumers' and capital goods, joint demand and loss leaders, production cost and profit, adjustment of costs, production incentives, and exchange in a capitalistic economy. His general approach to these problems is essentially a dynamic one, in the sense that time and variations in time are taken into account. It is therefore not surprising that both his methods and his results are often very different from those of traditional economics. It seems, however, that he has a tendency to overstress this difference. We cannot blame Dr. Roos if he is impatient with traditional economics. His attitude is shared by many distinguished economists, among others Professor Knight[4] and Mr. Keynes.[5] One cannot help feeling that a num-

[3] P. N. Rosenstein-Rodan, "Das Zeitmoment in der mathematischen Theorie des wirtschaftlichen Gleichgewichtes," *Zeitschrift fuer Nationaloekonomie*, I (1930), 129 ff.; "The Rôle of Time in Economic Theory," *Economica*, N.S., I (1934), 77 ff.; O. Morgenstern, "Das Zeitmoment in der Wertlehre," *Zeitschrift fuer Nationaloekonomie* V (1934), 433 ff.

[4] F. H. Knight, *Risk, Uncertainty and Profit* (reprint; London, 1933), Preface to the reissue, especially pp. xii ff., xix ff.

[5] J. M. Keynes, *The General Theory of Employment, Interest and Money* (London, 1936), pp. i ff., 333 ff.

ber of misunderstandings could have been avoided if he himself had possessed a somewhat greater familiarity with traditional mathematical economics and especially with the writings outside the influence of the Marshallian school. The weaknesses of his approach are the common inheritance of the Marshallian tradition: the overstressing of the methods of partial equilibrium analysis and the neglect of its limits, of which Marshall himself was very well aware.[6]

Nobody could deny the fact that great progress in economic theory has been made in recent years by the Marshallian school with the methods of partial equilibrium analysis. It is only necessary to call to mind the modern developments of the theory of limited competition, price discrimination, and similar subjects.[7] In comparison with those achievements the contribution of the Lausanne school with the methods of general equilibrium has been rather small. There has been a kind of unfortunate sterility about the great work of Walras[8] and Pareto,[9] which, so to say, was too good to be useful. The most recent developments of utility theory in England may bring about, it can be hoped, a happy combination of the general and the partial equilibrium approach.[10] Even the followers of the Lausanne school, when they succeeded in the solution of some important problems, were generally compelled to resort to the partial-equilibrium method. There is a general neglect of utility or indifference curve theory in Dr. Roos's book. This goes farther than the criticism of Evans,[11] and neglects entirely his suggestions made for the improvement and perhaps replacement of utility theory by something else.[12]

Perhaps the most interesting part of Dr. Roos's investigations is his study of demand. He starts from the point of view of purely partial-equilibrium analysis and considers different types of demand functions. The quantity demanded is supposed to depend not only on the prevail-

[6] A. Marshall, *Principles of Economics* (8th ed.; London, 1930), pp. 341 ff.

[7] E. Chamberlin, *The Theory of Monopolistic Competition* (Cambridge, Massachusetts, 1935); J. Robinson, *The Economics of Imperfect Competition* (London, 1934); P. Sraffa, "The Laws of Returns under Competitive Conditions," *Economic Journal*, XXXVI (1926), 535 ff.; G. F. Shove, "Varying Costs and Marginal Net Products," *Ibid.*, XXXVIII (1928), 258 ff.

[8] L. Walras, *Eléments d'économie politique pure* (2d ed.; Lausanne, 1889).

[9] V. Pareto, *Manuel d'économie politique* (Paris, 1909).

[10] J. R. Hicks and R. G. D. Allen, "A Reconsideration of the Theory of Value Parts 1, 2," *Economica*, N.S., I (1934), 52 ff., 196 ff.

[11] *Op. cit.*, pp. 116 ff.

[12] *Ibid.*, pp. 167 ff.

ing price but also on income, on the prices of competing and substitute goods, and on past factors. He seems unaware of the fact that, with the exception of the last-mentioned factor, economic thought outside the Marshallian school has always paid some, if not enough, attention to these problems.[13]

The interesting and new thing is the consideration of past factors which, it is true, had already begun with Evans and which unfortunately is left rather vague. Universal generality, a great virtue of the mathematician, is likely to become a vice with the economist. On the other hand, Dr. Roos is only too willing to consider special forms of the functional relationships which are simple and convenient from the mathematical point of view but often not very satisfactory from the economic one. Every demand curve is linear and every cost curve quadratic. This is all very well as long as it is considered as an approximation; and in many cases we simply could not do better, especially with demand functions involving integrals. But it would have been desirable to stress more the approximative nature of the special functions considered and to indicate more clearly that the results reached, which are often of a very practical nature, depend essentially on it. They might have been considerably different if another approximation had been chosen.

The mathematical economist is not in the fortunate position of the physicist, for whom nature turns out to be simple. (Alas, even this has changed in the days of relativity and quantum mechanics!) It is very trying to choose a special form for functions about which we know little, and to work with them. But would it not have been preferable to consider general functional relationships, restricted, however, by a few properties which we really know or which are at least highly probable? It is also most important that they have an economic meaning, which can be most easily deduced from the point of view of utility theory.

There seems to be a strong case against the overstressing of conclusions reached with the help of approximations. It should be noted, nevertheless, that some of the approximations used by Dr. Roos give satisfactory results. His functional definition of the concept of the elasticity of demand is very useful and may prove important for future investigations. His study of demand incentives and his use of probability theory in it are highly interesting. But the use of the normal law of errors is not less arbitrary than the use of a linear demand curve. The

[13] See especially P. N. Rosenstein-Rodan, "La complementarità prima delle trappe del progresso della economia pura," *La riforma sociale*, No. 3 (1933).

fundamental idea is nevertheless highly ingenious. It is one of the few intelligent approaches to the problem of time lags from a theoretical, rather than a purely statistical-empirical, point of view.

Similar, and also very important, is the study of joint demand and loss leaders. It fits very well in the modern theory of monopolistic economic phenomena[14] and has a definite relation to the theory of selling costs. There are a number of more or less arbitrary assumptions, but this does not damage the argument appreciably.

The remaining theoretical parts of the book are somewhat less satisfactory. As long as Dr. Roos speaks of demand for particular commodities the Marshallian position of partial equilibrium is reasonable and even fruitful. The same is true for the analysis of costs. But only a careful general equilibrium analysis can give us insight into problems of production and employment in the community as a whole. Dr. Roos's criticism concerning the usual theory of production seems to some extent to be justified. It is indeed necessary to take dynamic factors into account, in order to get a more realistic approach. But it is not easy to see that he gives anything better. His own analysis leads him frequently to the familiar conclusions of orthodox economics. However, he states the assumptions more clearly in some cases.

Dr. Roos's treatment of production and profit is very interesting. He takes expectations, risk, psychological factors, into account and gives an entirely novel treatment of the problem. His analysis has some similarity to Mr. Keynes's new approach,[15] but it is hampered even more than the latter by the arbitrariness of the assumptions made and the choice of the functions analyzed. Here, certainly, greater generality would have been preferable, even at the expense of the precision of the results, which is somewhat misleading. His remarks on the dependence of profit on the sensitiveness of demand are highly interesting and furnish a nice piece of partial analysis. But it is clear that the psychological factors, especially the expectations of entrepreneurs, but also those of consumers, depend essentially on the situation of the economic system as a whole and cannot be dealt with sufficiently in a partial-equilibrium analysis.[16]

The same must be said about Dr. Roos's treatment of production

[14] Chamberlin, *op. cit.*, pp. 117 ff. [15] Keynes, *op. cit.*, pp. 23 ff.

[16] See the discussions by C. H. P. Gifford, "The Period of Production under Continuous Input and Point Output in an Unprogressive Community," *Econometrica*, III (1935), 199 ff.; J. M. Thompson, "Mathematical Theory of Production Stages in Economics," *ibid.*, IV (1936), 67 ff.

incentives, behavior of free and restrained prices, and exchange in a capitalist economy. He gives many interesting hints, and his stress on the influence of expectations and psychological factors in the producers' goods industries is especially to be welcomed. But unfortunately he fails to present a closer analysis of these expectations and factors, which, it is agreed, is not very easy. His treatment of the phenomena connected with the trade cycle remains somewhat cursory and brief. He takes the point of view of the rather crude form of the quantity theory of money and neglects all effects of the different stages of production and the maladjustments resulting therefrom. These problems should have been very attractive to a mathematician. Dr. Roos's general method of analysis, and especially the treatment of lags, would have enabled him to work them out more clearly and make finer distinctions than simply those between producers' and consumers' goods industries. Some of his remarks on price-fixing point in this direction.

But it should be emphasized in conclusion that, in spite of this criticism, Dr. Roos's book is important and useful, if difficult, for the economist. Especially so for the mathematical economist and the statistician, who should hasten to familiarize themselves with the methods used. Without any doubt, there is a great probability that these methods and the general approach of the book will be most important for economics in the future.

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Monetary Mischief. By GEORGE BUCHAN ROBINSON. New York: Columbia University Press, 1935. Pp. xiv+188. $2.00.

The Economics of Inflation. By H. PARKER WILLIS and JOHN M. CHAPMAN. New York: Columbia University Press, 1935. Pp. xi+443. $4.50.

British Monetary Policy. By FREDERIC BENHAM. London: P. S. King and Son, Ltd., 1932. Pp. vii+116. 5*s*.

It would be a pleasure for the reviewer, who considers himself a conservative in matters of monetary policy, to be able to report that these three volumes show that conservatism on questions of monetary policy may be expected to go hand in hand with "soundness" in matters of monetary theory. The reviewer regrets that he can report nothing of the kind.

It would be easier to be more charitable to Mr. Robinson's book if it could be judged solely as a typical performance by a "practical man" with a considerable interest in the broader aspects of banking policy. We should then have been prepared for the usual red herrings—such as a moralizing emphasis upon the fact that the Federal Reserve Board is composed of "political appointees" instead of "active bankers" (pp. xiii, 57 f.)—and we should have been resigned to the generally hortatory tone of the whole performance. Since, however, the volume comes to us under the imprint of the press of a great university, and since the author does not hesitate to refer to the present status of the "theory of money" (e.g., p. 3), we are entitled to criticize the substance of the book, not on the basis of admiration for the author's astuteness—as reported on the jacket—in "liquidating his business, in preparation for the coming catastrophe" of 1929, but on the basis of the author's acquaintance and ability to use the weapons which are provided by that "theory of money" to which he refers so confidently. One is hardly reassured as to the author's competence in this field by discovering, for example, that he sees no inconsistency in simultaneously desiderating "a monetary system which will . . . . regulate . . . . the total of the new capital investment at approximately an amount which equals the sum of the net savings of individuals" (p. xi) and suggesting that "Federal Reserve policy should be responsive to trade," in the sense that "the money supply [which is held to be 'largely determined' by 'Federal Reserve policy'] should be elastic, expanding with more business but also contracting with less business" (p. 8). There are, to be sure, parts of Mr. Robinson's book which are by no means as bad as this example might suggest; it is only a pity that the author should not have been more acutely aware of the varying depth of the water covering the ground which his book undertakes to explore.

Those parts of the volume edited by Professor Willis for which he is personally responsible represent the kind of thing which, as a conservative, the reviewer can only profoundly regret. Professor Willis does not hesitate to characterize the monetary theory of his opponents as "wholly obsolete" (p. 56), since it is based upon "an antiquated, if not totally erroneous, view of the nature of prices" (p. 138). He cannot take it amiss, therefore, if one of those for whose theoretical orientation he doubtless has little respect would retort that Professor Willis' own monetary theory is not only "antiquated," but incredibly muddled. This will hardly be granted by those who are convinced by Professor Willis' comments (pp. 54 ff., 132 ff., etc.) on the "quantity

theory," for example; but it will be accepted by those who can sense the difference in quality between Professor Willis' pages and those, say, of Messrs. Heilperin, Machlup, and Schumacher, in the same volume.

It should be a matter of honor with conservatives, moreover, to do full justice to the case of their "inflationist" opponents. The reviewer cannot agree that Professor Willis has upheld the honor of the conservative camp in this respect; and he would cite, in support of his contention, not only such pages (46 ff., 93 ff., 117 f.) as those which Professor Willis devotes, for example, to the problem of debt, but also the contrasting example set by Mr. Kazakévich's essay in the same volume, on "Inflation and Public Works."

Dr. Benham's little volume was published in 1932. The action of the editors of this *Journal* in assigning it for review at this late date may have been based merely on an entirely justified desire to call belated attention to a book which accomplishes admirably the modest task it sets itself. But the reviewer would like to believe that the editors also hoped to assuage the lacerations that were left on the reviewer's conservative soul by a reading of the other two volumes under review. On points of detail and even on general conclusions, one can disagree with Dr. Benham, as one can disagree with the essays, say, of Messrs. Machlup and Kazakévich; but at least one can say that Dr. Benham's book strikes a level of competence and fairness which does honor to the conservative position by demonstrating that it is possible to be a conservative without being either an incompetent or a bigot.

ARTHUR W. MARGET

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Enquiry on National Public Works. Geneva, League of Nations, Organization for Communications and Transit. New York: World Peace Foundation, 1934. Pp. 281. $3.00. (*Addendum.* 1935. Pp. 226. $2.00.)

These two volumes together furnish a large mass of data on the public works activities in recent years of many countries throughout the world. Some of the material presented is informative and useful; most of it is very uneven in quality; and much of it is of very dubious value.

The original impulse for the inquiry came from suggestions on the part of the International Labor Office regarding the possible utilization of international schemes of public works as a remedy for unemployment

and depression. The League Council and the Assembly both felt that continuous international study of the basic questions relating to public works, including large programs financed out of national resources, would prove of great value in permitting comparisons of the experiences of different countries, especially in regard to the effects of such measures in relieving unemployment and stimulating business recovery; and that governments would be enabled to judge of the feasibility and desirability of carrying out public works programs on parallel lines. The end in view was laudable, but achievement falls considerably short of it.

The first volume contains the replies of the governments of 29 countries, and the *Addendum* of 9 more, to questionnaires submitted to them by the Communications and Transit Organization. The questionnaires asked for information on the volume of public works undertaken since the beginning of 1929; the principal administrative methods followed; the chief methods of financing employed; allocation of expenditures between materials and equipment and labor; classification of expenditures by types of public works; and finally the government's opinion regarding the effects obtained or expected in promoting recovery and reducing unemployment. The replies received are reproduced virtually in full, without critical appraisal or interpretation.

Through no fault of the League—except perhaps in its judgment in seeking information in this manner—the material inevitably varies greatly in both quantity and quality as between countries. Thus, Australia supplies 45 pages; China, 27; Poland, 37; Sweden, 35; but there is nothing on Germany. The British government contents itself with a modest page and a half, virtually bare of figures. Having turned its face against a policy of expanding public works as a recovery expedient, it was clearly not much interested in shedding light on the problem. In contrast, the United States, not unexpectedly, in view of the opposite course it has pursued in this matter, handsomely contributes 30 pages of useful information.

Even where the descriptive matter is fairly copious, it tends to be scrappy and incomplete. Many important aspects of the problem are neglected, no doubt because accurate and comprehensive data are not yet available for most countries and their governments were not prepared to incur the very considerable trouble of collecting them. Thus it is usually impossible to infer just how much the different countries actually did attempt to do, what measure of success they had, and what were the difficulties encountered. The figures similarly are often largely meaningless, being, so to speak, suspended in mid-air, without adequate

explanation of their method of collection, their coverage, or the norm against which they are to be measured. Thus the general impression conveyed, of activity and success on the part of many governments in speeding public works expenditures during the depression, is quite probably misleading. Official statements are likely to put the best face on things, even if they do not square with all the facts. The section on the United States, however, is one of the fullest and best, doubtless because of the extensive research into the problem which had already been carried out by P.W.A., the National Planning Board, the Stabilization Board, and the National Bureau of Economic Research. One suspects that the data on many other countries are as notoriously bad as they were in this country before the work of these bodies. In the absence, however, of similar comprehensive and reliable data for most other countries, these volumes probably give as much information as can be hoped for at the moment on current public-works programs throughout the world, and should prove useful in affording a point of departure for further intensive studies. In themselves they do not shed a very strong light upon the problem at which the questionnaire was directed. The hope expressed that the particulars supplied would enable governments to decide about the feasibility of co-ordination between the public-works policies severally pursued by them seems likely to be disappointed.

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Energielehre und Geldtheorie. By ZOLTÁN SCHILLING. Munich: Duncker & Humblot, 1934. Rm. 7.50.

In times of monetary chaos attempts to place money on a solid rock will always command a certain amount of respect and interest even if they prove to be disappointing. This is the case with Mr. Schilling's book on "the theory of energy and monetary theory." Unfortunately, there is, besides perhaps the phraseology, nothing new in the book. Moreover, it must be said that the study does not live up to the level of various other mechanistic approaches to monetary theory. The term "energy," quickly reduced by the author to economic energy, stands for nothing more than economic value; and Mr. Schilling's theory of economic value is but a vague formulation of the good old marginal-utility theory.

Numerous analogies and terms taken from physics and engineering might conceal this fact from the more casual reader or from those who

are not at all familiar with economic literature. It does not greatly clarify economic and monetary issues merely to give them new names taken from the technical vocabulary of physical science. What, specifically, can we learn from a statement like the following?

> As we saw, our line of thought led us to the final result that the phenomena of economic life, like those of the great nature, are nothing but transformations of potential economic energy into active energy, and vice versa. In this process of transformation we have . . . . regarded money as active energy, from which it follows that everything that is not money is, from an economic point of view, potential energy [p. 56].

The factors of production, land, labor, and productive plant and equipment appear as potential energy. Money, in the sense of the total quantity of effective (circulating) media of exchange, represents the active energy. Yet, if I understand the author correctly, the productive services of the factors of production (in any point in time) also figure as active energy. Which of the two things, then, is the true active energy? There are passages in the book which suggest that there is something like an intrinsic value-energy in money. We read, for instance, that "in our social organisation the motivating (wirkende) energy is money" (p. 57). On the other hand, however, the author assures us in numerous parts of the book that money is merely a "bearer" of active energy. This view is certainly more in line with his introductory chapters on the nature of economic value or energy.

Nor are the conclusions which Mr. Schilling derives from his formula, "Money is active energy," very convincing. In contrast to the factors of production, money, so he says, can never be potential energy; in other words, it can never be a store of value. He maintains that, if individuals proceed to hoard part of their money income, that part of the total quantity of money which remains in circulation will automatically command that total amount of energy which formerly was represented by a larger quantity of effective money. It shall not be denied that deflation increases the value of the monetary unit. Strangely enough, however, not only the value of the still-circulating units but also that of the hoarded units increases. To be sure, in ideal cases of strictly simultaneous and equal hoarding and dishoarding on the side of all members of the community nobody will experience material gains or losses. But is this the story of hoarding? Moreover, is it not true that deflationary processes, under the actual conditions of price and cost rigidity, result in unemployment and a decrease in output? How,

then, can a reduced quantity of effective money carry an amount of energy equal to prehoarding conditions?

If Mr. Schilling's study is to be understood as a plea for flexibility of the economy, we can only heartily agree with him.

WALTER EGLE

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The New York Merchant on the Eve of the Revolution. ("Columbia University Studies in History, Economics and Public Law," No. 404.) By VIRGINIA D. HARRINGTON. New York: Columbia University Press, 1935. Pp. 389. $4.50.

The study of economic conditions in the American colonies during the disturbed two decades preceding the Revolution, so long sadly neglected, has in recent years begun to attract a little of the attention it so much needs. An excellent start was provided by Schlesinger's brilliant *Colonial Merchants and the American Revolution*, though there political reactions rather than underlying economic conditions were the main objective of study. More recently Miss Saliers' *Charleston Merchants on the Eve of the Revolution* has proved a valuable addition to our knowledge, and now we have a similar study covering the city of New York. It is to be hoped that like monographs covering Boston, Newport, Philadelphia, and the more peculiar conditions of the tobacco colonies will eventually be undertaken.

This volume commences with a survey pointing out the important position held by the merchant in this colonial port and then turns to an account of the organization and methods of conducting trade. An interesting account of the ways in which a merchant invested his surplus earnings is followed by chapters on the volume, character, and methods of both overseas and intercolonial trade and on governmental activities related to business. Finally, there is an account of the reactions upon New York trade of events from the outbreak of the French and Indian War down to the Revolution. The emphasis throughout is upon conditions during the third quarter of the century, but there are frequent references to those during the first half of the century and some comparisons with English mercantile organization. Extensive use has been made of contemporary mercantile correspondence and accounts, much of which is only available in manuscript form, and the results well indicate the great value of such sources in throwing light upon the business conditions and methods of this period. Especially

useful are those Appendixes with statistical tables on foreign trade and shipping containing hitherto unpublished material from the British Public Record Office.

In the main this study tends to substantiate rather than to controvert the more generally accepted ideas as to the conditions prevailing at this period, while at the same time it supplements our knowledge concerning many points of less general importance regarding the mercantile practices and conditions of the day. Its chief value consists in providing additional evidence to support tentative conclusions which lacked an adequate factual basis, due partly to the paucity of source material and partly to lack of study of such material as was available, and as such it is most enlightening and valuable. Thus, while Callender's earlier idea that the whole decade preceding the Revolution was one of depression was largely dispelled by Schlesinger's study, we here obtain additional proof that in New York at least the early 1770's were years of prosperity. As regards the general organization of trade the author concludes that in New York it was similar to that in other American cities and typical of that prevailing in the eighteenth century in England, though less elaborately developed. The importance of family relationships in business dealings is stressed throughout and great pains have been taken to indicate what those relationships were. Numerous details provide interesting evidence of the methods used in illicit trade and vividly illustrate the difficulties confronting a colonial mercantile center facing the necessity of making relatively heavy payments abroad yet possessed of only a small and violently fluctuating supply of specie and relatively undeveloped credit facilities. The fundamental importance of conditions overseas in determining the fluctuations in business conditions is one of the strongest impressions conveyed.

There are a few points, however, concerning which this study may serve to modify current views. Thus the reviewer has long expressed the belief that when an adequate study of conditions was made it would show that the depression after 1763, at least in the first years, was chiefly a reaction from the war-time boom of 1755–60 rather than due to English restrictive legislation, and this is the conclusion reached by the author. The reviewer also finds here additional support for his belief that the "scarcity of money" and British restrictions on its issue deserve more stress as causes of popular discontent at this period, especially as compared with that given trade regulations, than is generally accorded them. Finally, have we not now sufficient evidence

that the rapid development of the export trade to southern Europe and the Wine Islands during the eighteenth century provided a much more important source of means for meeting payments due England than has been commonly recognized?

CHESTER W. WRIGHT

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An Economic History of Canada. By MARY QUAYLE INNIS. Toronto: Ryerson Press, 1935. Pp. ix+302. $3.00.

"The Precambrian shield dominates the history as it dominates the landscape of Canada. It has set the terms and moulded the forms of Canadian life and, having had the first word, will, in its time, have the last." So, Mrs. Innis. She further recognizes, to a certain extent by implication, that Canada was and is divided into what are more or less disparate economic units. Perhaps it is a recognition of this fact that has led her to restrict her study for the most part to the so-called forgotten areas, the fishermen, the Indians, the *voyageurs*, the farmers, the navvies, the miners; to forgotten commodities—beaver, iron, brandy, rum, cod, square timber, potash, and placer gold; to forgotten equipment—the canoe, the Durham and York boats, the stern-wheel steamboat, and the sluice box.

"The interest may have been in the continuous labor of Canadians who have shifted the scenes rather than on those who have been engaged in the unseemly rush to take the curtain call"—but it is those who have taken the curtain call who have been largely responsible for calling the tune and Canada, as we know it today, is largely of their making. As a believer in the materialistic interpretation of history I must conclude that it is our capitalistic economy which has been instrumental in molding the destinies of Canada. And yet I read in the editorial Preface that "this is not to neglect . . . . the entrepreneur," etc.

I feel quite sure that *An Economic History of Canada* is a much too ambitious title for the fascinating studies which I have had the pleasure of reading under that name. I have been particularly interested in those parts of the book which deal with the earlier aspects of Canadian economic history. The stories of the sixteenth-century fishing industry and of the struggle for economic supremacy between the French and English cultures are well and vividly told. The period of consolidation and settlement are also adequately dealt with, although here one is

bound to meet the divergent and opposing interests of the different economic units, divergences which are sure to result in scrappy and unsatisfactory summaries. "I too have borne these things."

Probably the least satisfactory parts of the book are the concluding chapters which deal with railroads, steamships, and wheat. Interesting as they are, my feeling is that they deal only with certain superficial aspects of the subjects considered. Certainly, for those who are existing in 1936 or even for those who were thinking about these questions in 1914—the year when the study ends—there is an air of unreality and illusion in the material and the conclusions here set forth.

J. C. HEMMEON

McGill University

A History of the Canadian Bank of Commerce: With an Account of the Other Banks Which Now Form Part of Its Organization. Vol. III: *1919–1930.* By A. ST. L. TRIGGE. Toronto: Canadian Bank of Commerce, 1934. Pp. xv+576.

Bank histories are apt to be very discreet performances, even when written by journalists of the competence of Victor Ross, the author of the first two volumes of this history. When the narrative under review approaches the present time, as in the present volume, and concerns persons now living, it becomes yet more conventional in character—a characteristic which has not been reduced sensibly by confiding the narration to one who "has lived through most of these years at the Head Office as secretary of the bank." The story of the slow changes in banking methods, of the ups and downs in business, and of the passage of personalities in and out of high office in the bank is therefore enlivened by tales of robbery, fire, and flood which, however interesting to employees of this and other banks, cannot be of great moment in its history and are of even less importance in the history of the community it served. Nor have any of the incidents here related the possibilities of that thrilling tale of Yukon Adventure, 1898, told so graphically in Volume II. They do serve, however, to preserve the air of a leisurely dignified account to which the very excellent book-making of these volumes contributes so much. Like the bank buildings whose pictures adorn their pages, they are mute but impressive evidence of the important part which a good appearance plays in the commercial banking business in Canada.

The student of banking will find in this volume, as in the earlier ones,

impressive evidence of the inevitability, under the geographic and economic conditions in Canada, of the trend to systems of branch banking which are nation-wide in extent. It includes the history of four smaller banks which were absorbed by the Bank of Commerce because their directors regarded the future with doubt and the bank found them useful in the rounding out of its coverage of the country.

The most striking instance of that tendency is the case of the Western Bank, which was established in Oshawa, one of the smaller towns in Ontario, in 1882, had its head office there for the whole twenty-seven years of its existence, and was managed throughout by the same group of directors and senior officers avowedly as a local bank to foster the industry of the town. The name first suggested, "The First National Bank of Canada," indicates the model on which it was drawn. No branches were to be established, except such as were needed to gather in the deposits from the surrounding farming community which were to finance the loans to the manufacturers and traders of the town. The whole attention of the bank was to be given to the lending of money in a community with which the officers were familiar from long acquaintance. So successful were they in attracting deposits, indeed, that much money had to be left on deposit with correspondents; and eventually branches were opened in Georgian Bay towns as lending agencies. Yet the bank had but twenty-six branches when it was absorbed, and these were grouped in three small areas in Ontario; it was therefore essentially a local bank. But the growth of Oshawa had not been rapid enough to absorb all its funds, and so the bank was united in 1909 with the Standard Bank which, in effect, moved the main lending office to Toronto and placed the wider facilities of a larger branch system at the disposal of its customers. The Standard Bank itself went into the Bank of Commerce in 1928.

Even so thriving a town as Hamilton and a much freer extension of branches could not provide the basis for permanent success to a local bank. The Bank of Hamilton, founded in 1872, persisted with success until the difficulties of the year 1923. These so impressed the directors with the precarious hold on public confidence which even a soundly managed but small bank could maintain as to lead them to despair of its future and arrange for its amalgamation with the Bank of Commerce.

The stories of these old banks abound in hints as to support given to this railway or that industry, hints which might surely have been expanded without breach of confidence. As it is, the economic historian

will perhaps find the most valuable part of the volume to be the short footnote accounts of the important personages mentioned in the text, indicating their origins and business connections. It is unfortunate, from the point of view of the economic history of Canada, that the evident care and meticulous accuracy with which this volume has been written, could not have been applied to those more weighty matters on which the documents which the author studied must shed much light.

F. A. KNOX

Queen's University

Economic Principles of Transportation. By W. T. JACKMAN. Toronto: University of Toronto Press, 1935. Pp. 891. $5.00.

This is a revision of the author's *Economics of Transportation*, published in 1926. There has been some re-writing, and something like 80 pages describing railroad-rate structures in the United States has been removed to make place for material that has become available during the last ten years. The additions include a critical discussion of the St. Lawrence Ship Canal project, a second chapter on government ownership in Canada, several pages on the control of international traffic between Canada and the United States, a fuller treatment of the port differential question, and numerous minor changes throughout which bring the volume up to date. The chapter on highway transportation has been expanded, but not sufficiently to permit adequate discussion of motor transport. The revised book is 73 pages longer than the work which it replaces, but its structure has been very slightly changed.

Jackman's treatise is hard reading because of excessive detail and because the argument is poorly organized. A good deal of the theory of rates, for instance, which is presented in the chapter on "Principles of Ratemaking," is discussed afresh in the chapters on "Practical Aspects of Ratemaking," where one would expect the theory to be illustrated and applied. Nor is the reader's task simplified by a succession of six chapters each bearing the latter caption as a chapter heading. The last quarter of the book contains a large amount of interesting material, but the treatment owes little to what has gone before, and does not mark the conclusion of a balanced discussion. There is no bibliography, and little footnote reference to contemporary literature.

Professor Jackman approves, for the most part, of adjusting rates according to the value of the service. He is confident that this will not

lead to overcharging, because, in order to be prosperous themselves, the railways must serve prosperous communities. He seems to concede, moreover, that the ideal of maximum ton mileage is a proper objective for railway policy. This is certainly not always true, as the experience of the United States has repeatedly shown. Perhaps if it were true, and if the railroad and the public interest should inevitably coincide, we might be spared much of the present expense of government regulation. It is not even clear how far the author believes in the advantages of stable and uniform rates. He does say that the Board of Railway Commissioners has been of untold service in Canada, largely because it has lessened the evil of railway discrimination between persons; and he criticizes truck rates because they differ with different shippers, so that one firm cannot know to what extent it can compete with another in the same line, and business which has to depend on common and contract carriers assumes all the essentials of a great gamble. But after explaining that on the Great Lakes each shipment is the subject of a separate contract and that on the same vessel, going between the same ports on the same trip, there may be carried grain belonging to different shippers, but of the same grade, at different rates, he adds that this develops alertness and the study of business conditions on the part of the shipper, and that shippers are vitally interested in seeing that competition, under which these unequal rates prevail, is preserved unfettered. He observes also, in speaking of the requirement in Canada that railroad rates must be filed before they go into effect, that if this rule were complied with in spirit, there would be very little initiative left on the part of railway management. As a matter of fact, shippers call up the freight traffic manager on the telephone, and rates are arranged that will enable them to do business. "In no other way," says the author, "does it seem possible for business men to take advantage of their opportunities in commercial life where the conditions are continuously changing." When one reflects upon the probable attitude of the American Interstate Commerce Commission toward such a business philosophy, one is not surprised to read that "regulatory control in Canada has not yet reached the stage which it has attained in the United States, and it is the hope of those who desire the welfare of the country and of its railways that this country [Canada] may not follow in the steps of the neighbouring republic in this matter."

STUART DAGGETT

University of California

The Long and Short Haul Principle of Rate Regulation. By RALPH L. DEWEY. Columbus: Ohio State University Press, 1935. Pp. ix+ 287. $2.50.

Long the subject of controversy in Congress, in the courts, and in Commission policies, the famous fourth section of the Interstate Commerce Act has aroused continued interest in the minds of students of railway regulation and rate-making. Though a mass of material is available on the subject, there has always existed a need for a complete account of the history, economic significance, and application of the long-and-short-haul principle. Professor Dewey's study fills this need admirably.

The study begins with a careful statement of the long-and-short-haul rate-making problem, and it is made clear that this type of local discrimination still presents an important problem, and is by no means only an academic question.

The purpose of the work is to evolve a policy of applying the long-and-short-haul principle which will take into consideration the theoretical, historical, and practical aspects of rate-making and regulation.

The study can be divided into three sections. The first (chapters ii and iii) is concerned with the nature, causes, and effects of long-and-short-haul discrimination. The author, after describing the circumstances under which this form of discrimination has arisen, presents the arguments for and against the use of such discrimination, and does not hesitate to come to the conclusion, this early in the book, that "the practical considerations of competition may still justify long-and-short-haul discrimination. The practise must, however, be subject to public control. . . . . Otherwise the proper balance between public, carrier, and shipper interests is not maintained" (p. 56).

The second and longest section of the study (chapters iv to xii) contains a most detailed account of the development of long-and-short-haul policies from the original Interstate Commerce Act of 1887 down to 1934, together with a descriptive chapter on the administration of the Commission's policies and a short chapter summarizing those policies. Each legislative statute is dealt with, and here is to be found a clear and orderly, if somewhat too detailed, picture of the legislation and its interpretation by the Commission and the courts. The most original and valuable parts of this section are chapter ix, dealing with the application of the fourth section in general rate-making in the various territories, and chapter x, in which fourth-section cases involving specific commodities are carefully analyzed. Chapter xi, on ad-

ministration, contains a clear description of the machinery of the regulation, and of the extent to which it has been applied. In chapter xii, summarizing the Commission's policies, is to be found a most convenient statement of the circumstances under which the Commission grants relief from the fourth section.

Chapter xiii contains the conclusions. "The fourth section, with its flexible clause, has been admirably adapted to the needs of the situation" (p. 251). But Congress erred in not making a really effective clause until 1910; the courts are incompetent to pass upon the long-and-short-haul question; the Commission alone, as a group of specialists, can be looked to to handle the problem according to the particular needs of each case. The Commission's application of the section has been adequately flexible, but in the author's opinion it has been inconsistent and indecisive on the really large issues. Especially confusing has been the Commission's treatment of market competition and its interpretation of the "reasonably compensatory" clause. The book concludes with concrete suggestions for the consideration of the Commission, aiming toward more logical and efficient interpretation of and application of the fourth section.

The study is an admirable and complete treatise on a complicated and important subject, and fills a distinct gap in the literature on railway rate-making and regulation.

HERBERT E. DOUGALL

Northwestern University

Economics with Applications to Agriculture. By EDWIN F. DUMMEIER and RICHARD B. HEFLEBOWER. New York: McGraw-Hill Book Co., Inc., 1934. Pp. x+742. $3.75.

"Economic principles must be abundantly illustrated and effectively related to current economic problems if they are to be understood and retained by the average college student." Thus the authors of this very readable text in economics begin their Preface.

Since they have written their book for a special audience, namely, the students in agricultural colleges, they have naturally drawn many of their illustrations from agriculture. They have, however, used enough material from other sections of society to show many of the relationships that exist.

The authors take a broad but realistic view of economics, which they define as "the science which treats of those 'social phenomena' which are due to the activities of man in producing, acquiring, and using

material goods and services." They take the view that economics includes some matters other than the phenomena of price, but that matters relating to price are the most important. This definition makes it not only possible, but inevitable, for them to consider at numerous points the so-called "social" implications of economic activity.

It is refreshing, however, that authors who might, from their title, be thought to be special pleaders for agriculture seem to have avoided the sentimentality that leads to special pleading for a particular group. In their discussions of Say's law, for example, they state that the overproduction fallacy probably originates with persons who wish to find a market for some particular kind of good and, therefore, desire a scarcity of that particular thing.

> If my business is growing potatoes, it is to my interest that there shall be few potatoes, that everybody else's potato crop shall fail, provided there is not also a failure in the production of things other than potatoes. If all other production also fails, people will have nothing else to give me in exchange for my potatoes. The fallacious notions discussed in the preceding paragraphs result from the attention of people being directed too exclusively to the advantages which each as a potato grower gets from the failure of other men's potato crops and not enough attention being devoted to the advantage which each potato grower gains from the success of production in everything except potatoes. . . . . In the interest of the general welfare, however, the struggle over the division of the social income should and can be solved without uneconomic curtailment of production.

The authors have gone to considerable pains, in their definition of many economic terms, to show the various uses made of such terms by specialists and laymen. It seems to the present reviewer that they have done a real service to the typical undergraduate student in arranging, as clearly as they have, the series of connotations of these various terms. Their discussion of value, for example, on pages 164–67 is an excellent illustration. The discussion of the various uses of the term "market" is, it seems to me, not quite so satisfactory. The implications of the various uses of the term and the limits to the extent of the market are, perhaps, not quite adequately considered. The authors have the same difficulty with marginal utility, as is found everywhere. They attempt to solve this difficulty through the use of the term "marginal vendibility." The argument is that the incentive to purchase may or may not be the hope of satisfaction in the sense of utility. This treatment certainly avoids some degree of abstraction, but it leaves the ultimate question of why a commodity has a certain degree of vendibility quite unanswered.

The book, written, as it is, for agriculture and the present time, inevitably considers the New Deal and the popular attacks on existing political and commercial institutions. The student is warned that laissez faire, social control, and economic planning are policies that have always existed side by side, and that they may be applied both in different degrees and in different ways. On the whole, the authors appear to feel that control which results in restriction of production is always questionable and certainly cannot be used as more than a temporary expedient.

Rather than coming to any explicit conclusion regarding the recent political activities, the authors express the hope that the student may have been given sufficient foundation in fact and theory so that he can come to his own conclusions. If this has been accomplished, it is said, the book will have justified itself.

It seems to the present reviewer that this text might form the basis for a most admirable general course in economics in agricultural colleges. It is not, perhaps, the best approach for the student who proposes to major in economics, but for those who wish to attain a reasonable degree of economic literacy it should prove highly useful.

ROLAND S. VAILE

University of Minnesota

Employment Research: An Introduction to the McGill Programme of Research in the Social Sciences. By LEONARD C. MARSH. New York: Oxford University Press, 1935. Pp. xx+344. $3.00.

This volume, written by the director of social research of McGill University, is an introduction to the studies which are in progress at that institution, assisted by the Rockefeller Foundation. Like the Minnesota Employment Stabilization Institute, this McGill project is motivated primarily by current interest in unemployment; and it attempts to make clearer the long-run fundamentals of employment and unemployment by means of team work among scholars of numerous specialties. Monographs to be published in this series will deal with such subjects as characteristics of immigrants to Canada, British and others; legal status of the Quebec wage-earner; abilities and aptitudes of unemployed men; situations of port and railway workers. Most of the detailed surveys will be based upon data most conveniently accessible to the University, in the metropolis of Montreal.

Mr. Marsh's book gives very few hints as to the findings which are being obtained in these special studies, which were initiated in 1931;

he is rather concerned to show the interrelations among problems connected with fluctuations of industry and employment, making much use of materials from the 1931 census, and to explain at what points his group is putting what sorts of research methods to work. All the chapters contain discussions which are rather elementary, but the non-Canadian student will find these of some interest by reason of the numerous illustrative references to the Canadian scene. For example,

> In the cities, with a few notable exceptions, the entry of the [national government's] employment exchanges into the labor market is largely confined to adult unskilled labor. . . . . Trade union organization covers about twenty per cent. of the male wage-earning population, but its influence varies very considerably downwards from the railway crafts and printing trades, which are the most strongly unionized. The organized building trade workers, who are large numerically, are notoriously beset by non-union competition, particularly in depressed times, while the "closed shop" is far more the exception than the rule in most of the other fields into which the trade union movement has penetrated [pp. 121, 122].

The principal factual materials, however, to be found in this book are tables taken from the 1931 census, with some recombinations, charts, and maps produced by the McGill research. As Mr. Marsh says, his volume is "something of a source-book, bringing together the most generally needed information on employment (in Canada and Montreal)" (p. ix). Comparisons of these figures are to be made, in later publications, with earlier Canadian data. It may be hoped that later volumes in the series will also attempt more explicit comparisons of the local findings with inventories, estimates, and monographs which refer to other lands, notably Britain and the United States.

Z. C. DICKINSON

University of Michigan

An Historical Basis for Unemployment Insurance. A report prepared for the Employment Stabilization Research Institute, University of Minnesota, by INDUSTRIAL RELATIONS COUNSELORS, INC., OF NEW YORK. Minneapolis: University of Minnesota Press, 1934. Pp. vi+306. $3.00.

This study was undertaken for the purpose of making available certain data on unemployment insurance in European countries which might aid in the task of constructing an acceptable plan for the United States. The treatment is not historical in the sense of an interpretation

of the social, economic, and political factors which have influenced the development of unemployment insurance in various countries. It is, rather, a handbook of legislation and administrative experience, with some attention given to the principal derivatives from which present systems have developed. Four countries are chosen for study: Great Britain and Germany representing compulsory systems, and Belgium and Switzerland representing voluntary systems. A chapter and Appendix are devoted to analyzing existing and proposed plans in the United States.

In a piece of work such as this accuracy, conciseness, and clarity form the trinity of virtues, and to these standards the authors have admirably demonstrated their loyalty. The schematic arrangement of recent legislation and existing and proposed plans in Appendixes II and III are particularly useful. The book will undoubtedly be an indispensable item in the bibliography of social insurance long after the immediate situation which called for it has passed.

HELEN FISHER HOHMAN

Evanston, Illinois

The Employment Exchange Service of Great Britain: An Outline of the Administration of Placing and Unemployment Insurance. By T. S. CHEGWIDDEN and G. MYRDDIN-EVANS. New York: Industrial Relations Councilors, Inc., 1934. Pp. xv+310. $3.50.

This volume is the first of a series of studies undertaken by Industrial Relations Councilors, Inc., on the administrative aspects of public employment services and unemployment insurance in several countries. Its purpose is to set forth clearly and simply the detailed procedures by which the British employment exchanges carry on the functions of placing men and women in jobs and administering unemployment insurance benefit. The authors are two civil servants, who occupy high positions of authority and responsibility in the Ministry of Labour. Both have played important parts in developing the system as it now stands. The method is descriptive; the point of view that which has come to be identified with the permanent officials of the ministry.

The book has the merits of its limitations. It is accurate; it is comprehensive; it is authoritative. By skilful organization a confusing mass of detail is made easily accessible and even interesting. The value of the study for persons engaged in the practical work of an employment office is obvious. The book may also be read with profit by the general

student of unemployment problems for the insight one may gain into many of the larger issues through a detailed knowledge of administrative procedures.

HELEN FISHER HOHMAN

Evanston, Illinois

Wages in Sweden, 1860–1930. Part II, *Government and Municipal Services, Agriculture and Forestry, the General Movement of Wages in Sweden, 1860–1930.* By GÖSTA BAGGE, ERIK LUNDBERG, and INGVAR SVENNILSON. ("Wages, Cost of Living and National Income in Sweden, 1860–1930," Vol. II.) London: P. S. King & Son, Ltd., 1935. Pp. xix+393.

This is the concluding half of the study on wages in Sweden of which the first half was reviewed in this *Journal* in February, 1935. It maintains the high professional standard set by its predecessors in this series, and, like them, is of interest not only to students of Swedish economic history but to scholars who may contemplate similar studies for other countries.

It is especially valuable to Americans, since Sweden, like the United States, has changed from an agricultural debtor nation to an industrial creditor nation in the period under review.

This volume, like the previous ones, is intended more as a source book and convenient arrangement of statistical material than as a finished treatise on wages. It takes up wages in government and municipal services and in agriculture and forestry. Its most interesting part, however, is Book IV, which discusses the general movement of wages in Sweden from an economic, as well as a statistical, point of view. A close relationship is discovered between the annual value of the product per worker and the annual wage. The proportion of the value added by manufacture that went to the laborers is shown to have increased from the sixties to the early nineties, and to have decreased from the late nineties to 1917, with no apparent trend since then. Mechanical equipment per worker apparently did not change much in quantity except cyclically, from 1872 to 1905 or thereabouts, if allowance is made for price changes, but increased considerably thereafter. The proportion of workers in factories increased rapidly until 1900 but has declined since then as handicrafts, domestic industries, building, commerce, and communication have increased faster. The size of plants increased, but not so rapidly after 1913 as in the seventeen years before.

Real wages of the classes of laborers studied in this volume increased from the beginning of the period studied until 1930, with few interruptions except that caused by the war from 1914 to 1917. The increase was most rapid during the decades of declining commodity prices. The greatest increases were received by municipal employees, especially school-teachers. Working-hours fell from twelve or fourteen in 1860 to eight or ten in 1930 (the higher figures referring to agricultural laborers). But it would be tedious to continue culling germs of useful information like this. Let those who are interested refer to the book and they will be well rewarded.

RUFUS S. TUCKER

Twentieth Century Fund, Inc.

Report of the Connecticut Temporary Commission To Study the Tax Laws of the State and To Make Recommendations Concerning Their Revision. Submitted to the Governor of Connecticut November 9, 1934. Hartford, 1934. Pp. xxvi+642. (*Summary of the Report*, pp. xii+99.)

The volume under review presents the results of the work of a year and a half accomplished by a commission of seven members headed by Professor Fred R. Fairchild with a research staff directed by Dr. Benjamin P. Whitaker. As in his extensive studies for the Brookings Institution in Alabama, Mississippi, and New Hampshire, Dr. Whitaker has a claim on the gratitude of all tax students for the manner in which he has made available so much in the way of basic data.

The most significant sections of the report appear to be those concerning the corporation income tax, the personal income tax, and the retail sales tax.

The Commission recommends that interest payments and rental payments be disallowed as deductions in computing taxable income under the corporation income tax. This measure would "make for a more equitable distribution of the tax burden among these [net-income taxed] corporations," and would "introduce a stabilizing factor into the tax base . . . . " (p. 455). The "more equitable distribution" is deduced from the principle that "a business tax should not depend upon the financial organization of a corporation but rather upon the amount of business done," and the amount of business done is said to be related, not to the amount of owner-capital in the business, but to "the amount of capital used in the business whether borrowed or contributed by

stockholders." Hence, "it is necessary to redefine "net income" so as to include payments and accruals to the credit of all contributors of capital," which means that interest and rental payments cannot be deducted. The commission fails to recognize that, if such emphasis is to be placed on the "[total] amount of capital used in the business," it probably follows that imputed income from capital must be included in the tax base along with cash income from capital. Under the Commission's plan, there would be a lack of balance between Corporation A, owning its own factory building and land, and Corporation B, owning the same amount of capital, but holding it in liquid form (e.g., corporate bonds) and using the interest to pay rent on a factory building and land owned by another. Corporation B would be taxed more heavily than Corporation A. One tendency of such a tax might be to drive corporations to "solidify" as soon as possible their liquid assets, more particularly their income-yielding investment assets. The Commission's plan has some interesting possibilities for integration of a personal income tax with a business income tax, but this phase of the matter does not interest the Commission, in view of its aversion to an income tax. In general, the Commission's suggestion for a corporate net income base deserves far more critical analysis than is supplied for the reader in the report.

The personal income tax, as a state measure, under existing conditions, is vigorously condemned by the Commission. What makes the Commission's statement particularly disappointing to proponents of the personal income tax is the fact that here is no incoherent fulmination but a carefully calculated statement revealing a fundamental attitude that seems to connote a decided lack of sympathy with the income-tax movement as it has developed so strikingly among the states in the past two or three years. After noting that the incomes of individuals are generally accepted as the best single measure of ability to pay, and that the existing state and local tax system is proportional and perhaps even regressive, the Commission counters with the assertion that "this proportional or possibly regressive character of state and local taxes is counterbalanced by the highly graduated (progressive) personal income tax of the federal government," and refers to the then existing federal bracket rates (4 per cent to 63 per cent) as "extreme" (p. 571). So much is a matter of opinion, but the Commission turns dogmatic and declares that "to add to these heavily graduated rates [of the federal government] even the moderate rates which might

be imposed by the state would undoubtedly affect adversely the productivity of both federal and state taxes," and that a state income tax, added to the federal tax, would "carry the progressive feature of general personal income taxes beyond the point justified by any economic principles" (p. 572). The Commission seems relatively well disposed toward the kind of income tax that would have low personal exemptions or none at all, but dismisses it as impracticable.

The Commission is also deeply concerned over the variability in revenue of the income tax and wishes to avoid taxing income from real property. Although proposing a 5 per cent tax on interest and dividends, the Commission does so only to replace existing taxes on intangibles.

The recommendation for a temporary (four-year) 2 per cent retail sales tax to finance unemployment relief is similar in tone to that of the income-tax section. The equity issue is faced squarely, the sales tax is admitted to be regressive, but the federal personal income tax (this time coupled with the federal estate tax) is again referred to as an effective counterbalancing agent.

The Commission was instructed by the legislature to suggest ways to "reduce the load of taxation on real estate, if possible." However, the Commission's aversion to state aid, based on a feeling that each unit should spend its own money if waste is to be avoided, results in a program for only a moderate amount of relief to real estate.

The usefulness of the report is greatly enhanced by an extensive index and a separately printed 99-page Summary.

CARL SHOUP

Columbia University

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